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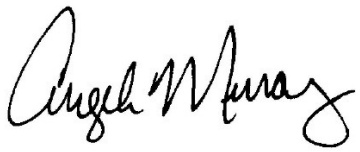
From the editor:

I am pleased to bring you the second issue of 2018 for the *Journal of Montessori Research*. This issue includes three very different articles that will contribute to the body of Montessori research in important ways and that I believe readers will appreciate.

The first article focuses on children's preference for using real objects over pretend ones extending previous research conducted in non-Montessori environments. The second article focuses on professional development opportunities for teachers using a teacher-centered mentorship approach. The final article explores Montessori education among Ngaanyatjarra students in a remote Aboriginal early childhood context.

I hope you are enjoying the new look and functionality of the journal site with the launch of OJS 3. As with any change, we are working through a few of the challenges we have encountered. If you experience problems with the new site, please let me know. Work is already underway on submissions for the Spring 2019 issue, so continue to monitor our site and look for announcements about publication in May.

Sincerely,



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Children's Preference for Real Activities: Even Stronger in the Montessori Children's House

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Keywords: *children, Montessori, preschool, activities, preferences, pretend, real*

Abstract: In the United States, children are often given the opportunity to engage in pretend activities; many believe this kind of play benefits children's development. Recent research has shown, though, that when children ages 4 to 6 are given a choice to do the pretend or the real version of 9 different activities, they would prefer the real one. The reasons children gave for preferring real activities often concerned their appreciation of the functionality; when children did prefer pretend activities, their reasons often cited being afraid of, not allowed to, or unable to do the real activity. Given that children in Montessori classrooms have more experience performing real, functional activities, in this study we asked if this preference for real activities is even stronger among children in Montessori schools. We also asked children to explain their preferences. The data are from 116 3- to 6-year-old children (M = 59.63 months, SD = 12.08 months; 68 female): 62 not in Montessori schools and 54 in Montessori schools. Children explained their preferences for pretend and real versions of 9 different activities. Children in Montessori schools preferred real activities even more than did children in other preschools, but all children explained their choices in similar ways. The implications of these results are discussed with regard to play in preschool classrooms.

Play is a highly valued activity in the United States; many parents, as well as the American Academy of Pediatrics, believe it is important, and even essential, for children's development (Ginsburg, 2007; Haight, Masiello, Dickson, Huckeby, & Black, 1994; Haight & Miller, 1993; Parmar, Harkness, & Super, 2004; Roopnarine, 2010). Americans spent more than $20.7 billion on toys in 2017 (NPD Group, 2018), and a popular toy category is materials for pretending (e.g., plastic foods, dolls, dress-up clothes). Furthermore, American children spend nearly 20% of their waking hours engaged in pretend play (Dunn & Dale, 1984; Haight & Miller, 1993): having tea parties with dolls, building forts, or making pretend meals in play kitchens. Conventional American preschools often have play-based curricula (e.g., HighScope; Schweinhart et al., 2005) and provide materials to facilitate playing "house" in the classroom, for example (Parmar et al., 2004; Rubin, 1977). Like parents (Singer, Singer, DiAgostino, & DeLong, 2009), preschool teachers highly value play and believe it facilitates children's learning (Bodrova, 2008; Engel, 2015; Sandberg & Samuelsson, 2003; Sherwood & Reifel, 2010). In line with these views, educational organizations such as the National Association for the Education of Young Children (NAEYC) and the Association for Childhood

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Education International advise educators to provide environments and materials that facilitate play (Copple & Bredekamp, 2009; Isenberg & Quisenberry, 2002); second on the NAEYC's (2018, Toys for 3- to 6-year-olds) list of best toys for 3- to 6-year-olds is "things for pretending."

Proponents of play criticize classrooms and teachers for shifting away from play-based curricula, claiming that a reduction in children's play may lead to negative outcomes (Kemple, Oh, & Porter, 2015). There is concern that kindergarten is becoming the new first grade, with incessant focus on academics and few opportunities for play (Bassok, Latham, & Rorem, 2016). In response, developmental psychologists have called on educators to bring play back to the classroom (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009). This concern and subsequent efforts to reinstate play arose because, in conventional schools, shifting away from play meant shifting toward regimented, teacher-led classroom environments. Montessori education offers a different choice.

Montessori education is in many ways playful, but it does not offer typical pretend-play materials. Initially it did, but children did not use them. As Maria Montessori described it,

> *Although the children in our first school could play with some really splendid toys, none cared to do so. This surprised me so much that I decided to help them play with their toys, showing them how to handle the tiny dishes, lighting the fire in the doll's kitchen, and placing near it a pretty doll. The children were momentarily interested but then went off on their own. Since they never freely chose these toys, I realized that in the life of a child play is perhaps something of little importance which he undertakes for the lack of something better to do. A child feels that he has something of greater [importance] to do than to be engaged in such trivial occupations. He regards play as we would regard a game of chess or bridge. These are pleasant occupations for hours of leisure, but they would become painful if we were obliged to pursue them at great length.* (Montessori, 1966, p. 122)

Because Dr. Montessori noted that children loved using miniature objects to engage in real activities—activities they see performed by the adults in their culture—Montessori classrooms provide many of these, calling them Practical Life activities. After engaging in such activities, "the child showed a completely different personality. The first result was an act of independence, as if he said: 'I want to be self-sufficient'" (Montessori, 1949, p. 245). Montessori classrooms provide children opportunities to prepare real food with real knives; to use and wash real, breakable dishes; and so on. Pretend play is sometimes even discouraged (Soundy, 2009), particularly if it involves using materials as toys rather than as learning tools (e.g., using Pink Tower blocks to build houses and create imaginary characters instead of building a concentric tower), but Montessori teacher trainers note that one should never stop a child from pretending. Instead, one should meet children where they are and use whatever interests them to connect them to the fascination of the real world, where useful creativity and imagination are best rooted (L. Lawrence, personal communication, October 4, 2017; G. Sackett, personal communication, May 30, 2018).

Dr. Montessori's observations suggest that, given a choice, children prefer real activities to their pretend counterparts. Taggart et al. (2018) recently conducted a study to examine whether this is the case. Children ages 3 to 6 were shown pictures of boys and girls engaged in pretend and real versions of nine different activities (e.g., riding a tractor, cutting vegetables, feeding a baby). They were asked which activity they would rather participate in and why. Children strongly preferred real activities, often alluding to functionality in their justifications: they could really go fast when riding a real horse, or they could really enjoy a yummy treat when baking real cookies. In contrast, when asked why they preferred the pretend activities, children often expressed being unable, unwilling, or unallowed to do the real thing; they could get a hook stuck in their finger when really fishing, or their parent would not allow them to use real knives yet. The children in this study were enrolled in various types of preschools, but preschool type was not considered a variable of interest because most children were enrolled in non-Montessori schools, precluding comparisons across school types.

We wanted to know whether being at a school in which one engages in real activities and has fewer school-day opportunities to engage in pretend ones influences children's preferences. We therefore tested a group of children attending Montessori schools. According to children's justifications in Taggart et al. (2018), it is possible that children in Montessori schools may feel less afraid of, more competent at, and more permitted to do real things and, therefore, may choose real activities more frequently. On the other hand, given that children in Montessori schools lack opportunities to pretend at school, they might have an unfulfilled desire to pretend that would lead them to choose pretend activities more often. We also examined whether, relative to the type of school, children's preferences for pretend over real activities change with age (from 3 to 6 years old) or vary by gender. Both of these scenarios were observed by Taggart et al. (2018): 3-year-olds were equally divided in their preference for real activities, and boys showed an even stronger reality preference than girls (although girls preferred real activities as well). Data from a subsample of this study were previously reported in Taggart et al. (2018); the Montessori sample was increased here to allow reliable subgroup comparisons.

Method

Participants

Participants included 116 children: 100 participated in the study reported by Taggart et al. (2018), including 62 children enrolled in non-Montessori preschools (M = 59.43 months old, SD = 12.22 months, range = 37.2–82.3 months; 57% female): 13 three-year-olds, 19 four-year-olds, 20 five-year-olds, and 10 six-year-olds. Twenty-nine of these children attended private preschools, 10 attended public preschools, three were homeschooled, two attended Waldorf schools, one attended Head Start, seven were in schools that could not be identified (e.g., "preschool in North Carolina"), and 10 were not currently in school. Fifty-four children, including 16 participating exclusively in this study, were enrolled in Montessori schools (M = 59.85 months old, SD = 12.03 months, range = 36.8–81.2 months; 61% female): 12 three-year-olds, 12 four-year-olds, 20 five-year-olds, and 10 six-year-olds. The children enrolled in Montessori schools represented at least seven different schools, which were identified by parental reporting of the type or name of their child's school or by testing location (i.e., a Montessori school). Of the five schools identified by name, one was accredited by the Association Montessori International (AMI, n.d.), and two were accredited by the American Montessori Society (AMS, n.d.) The remaining two schools were not listed on the AMI or AMS websites, but the school websites showed that at least some of their teachers were AMI or AMS trained. Children in both non-Montessori preschools and Montessori schools were predominantly White and middle class. Four additional children participated but were excluded from analyses because of failure to complete (n = 3) or understand (n = 1) the task.

Materials and Procedure

Participants were tested in a children's museum (n = 50), local Montessori preschools (n = 43, including all 16 children participating exclusively in this study), and a university laboratory (n = 23). Participants' parents provided written consent, and all children verbally agreed to participate. In addition, for the testing that took place in schools, the head teachers consented to have the study take place in a quiet corner of the classroom.

Participants were seated across from the experimenter as she explained the study: "I have a book with all kinds of different activities that you could do. I'm going to ask you which ones you would rather do. Does that sound good?" After the participant assented, the experimenter presented a book (22 x 28 cm) containing color photographs of girls or boys (gender matched to the participant) engaged alone in different activities. The children in the photographs were of various races and were not matched to the child's own race. The experimenter first presented the warm-up trial, in which a photograph of a child riding a bicycle

was on the left side of the page and a photograph of a child with a skinned knee was on the right side of the page: "Look, this girl is riding a bicycle [pointing to the appropriate photograph], and this girl fell off of a bicycle and hurt her knee [pointing to the appropriate photograph]. Which would you rather do?" Participants were then asked to justify their choice.

Nine test trials immediately followed. The order for these nine test trials was randomly determined and then kept constant for all participants. As in the warm-up, the experimenter showed the participant a pair of photographs: in one photograph, a child was engaged alone in a pretend activity, and in the other photograph, a child was engaged alone in a real activity. Each photograph was described to the participant as the experimenter pointed to it: "Look, this girl is pretending to wash dishes, and this girl is really washing dishes. See? These are pretend dishes, and these are real dishes." Whether the pretend activity was on the left or the right alternated by trial, and the experimenter always referred to the photograph on the left (from the participant's perspective) first. Participants were asked for their preference: "Which would you rather do?" After making their choice, they were asked to justify that choice: "Why would you rather [participant's choice]?" The nine activities included eating ice cream, riding a horse, baking cookies, feeding a baby, cutting vegetables, talking on a telephone, riding a tractor, fishing, and washing dishes.

Coding. Participants' justifications for their pretend and real choices were coded into the five discrete categories used by Taggart et al. (2018). The first category was *ability*, which included references to the child's ability to carry out the activity, avoiding a negative outcome associated with the activity, or whether they were allowed to engage in the activity (e.g., "I am not old enough to do it," "I don't want to get hurt," "My mom doesn't let me.") The second was *experience*, which included references to participants' experience with the particular activity (e.g., "I've done it before," "I've never done it before."). The third category was *functionality*, which included references to the affordances of real and pretend activities, as well as the usefulness of the activity (e.g., "I could eat it," "It really moves."). The fourth category was *liking*, which included references to enjoyment of activity (e.g., "It's fun," "I like it."). Other responses (19% of the total) did not fit within these categories and so were categorized as *uncodable* (e.g., "I don't know."). Participants received only one justification code for each trial; if they provided more than one justification, their first justification was used unless the first justification fell into the liking category, in which case their second justification was used. This practice allowed richer, more meaningful justifications than simple liking. Cohen's kappa was run on 20% of children's justifications to determine interrater agreement for this categorical scale. Agreement was high: $\kappa = .87$ (95% CI: .82–.93), $p < .001$.

Results

We first considered children's choices by subgroup and then examined their explanations for their choices. An ANOVA with school (i.e., non-Montessori, Montessori), age group (i.e., 3, 4, 5, 6), and gender (i.e., male, female) as between-subject variables and number of pretend choices as the dependent variable revealed main effects for type of school, age group, and gender, but no interactions. The main effects for gender and age group were consistent with Taggart et al. (2018) and are not discussed further here, since the focus of the study was on whether responses would vary by type of school.

The number of times children chose pretend activities differed by type of school, $F(1, 100) = 5.08$, $p = .026$, $\eta_p^2 = .05$ (a small-medium effect size). Children in Montessori schools ($M = 2.76$, $SD = 2.46$) chose pretend activities less often than children in non-Montessori schools ($M = 3.50$, $SD = 2.65$). Fisher's exact tests indicated that this difference was particularly strong for two activities: Montessori children especially preferred really cutting vegetables ($p = .004$, Cramer's V = .28, a small-medium effect size) and fishing ($p = .03$, Cramer's V = .21, a small-medium effect size), compared to children not in Montessori schools.

Age was significantly related to pretend choices in non-Montessori schools, $r(60) = -.36$, $p = .004$, but not in Montessori schools, $r(52) = -.20$, $p = .15$. However, the correlation in Montessori schools was in the expected direction, suggesting that, in both school environments, the tendency to prefer real activities

strengthens similarly with age. At age 3, about half of children's choices were for pretend activities, and at age 4 children began to strongly prefer real activities.

Justifications

The percentages of justifications by age group (i.e., 3, 4, 5, 6) and school (i.e., non-Montessori, Montessori) are shown in Tables 1 and 2, respectively. Each percentage of justifications for the four codable categories for real choices and pretend choices was analyzed with a separate MANOVA, using type of school and age group as fixed factors. For both real and pretend choices, there was a significant effect of age group but not of type of school, and there was no interaction.

Table 1

Mean Percentages of Children's Justifications for Choice by Age Group

	% of pretend justifications				% of real justifications			
	Age group				Age group			
Categorization	3	4	5	6	3	4	5	6
Ability	4	39	50	64	0	4	5	3
Experience	11	12	7	14	8	12	11	19
Functionality	7	4	7	9	10	32	48	46
Liking	29	29	23	4	30	40	29	24
Uncodable	49	16	13	9	43	12	7	8

Table 2

Mean Percentages of Children's Justifications for Choice by Schooling

	% of pretend justifications		% of real justifications	
Categorization	Non-Montessori	Montessori	Non-Montessori	Montessori
Ability	43	32	5	2
Experience	13	7	13	11
Functionality	7	6	40	34
Liking	17	30	28	35
Uncodable	20	25	14	18

For real choices, the significant age effect concerned the number of children in each age group who cited reasons related to functionality (e.g., "I can actually catch fish and eat them," "I could talk to my grandparents [on the real phone]"), $F(3, 104) = 5.67$, $p = .001$, $\eta_p^2 = .14$ (a medium-large effect size). Post hoc tests showed this was because 3-year-olds ($M = 0.19$, $SD = 0.31$) explained their real choices in this way significantly less often than 5-year-olds ($M = 0.48$, $SD = 0.27$, $p < .001$) and 6-year-olds ($M = 0.46$, $SD = 0.30$, $p = .004$); 4-year-olds ($M = 0.32$, $SD = 0.29$) also used this explanation less often than 5-year-olds ($p = .021$).

For pretend choices, ability was cited more often as children got older, $F(3, 89) = 12.26$, $p < .001$, $\eta_p^2 = .29$ (a large effect size); for example, a child chose to pretend to eat ice cream "because I don't know how to make ice cream," and another chose to pretend to feed a baby doll "because you wouldn't get dirty from

baby guck." Here were significant differences between 3-year-olds ($M = 0.04$, $SD = 0.11$) and 4-year-olds ($M = 0.39$, $SD = 0.42$, $p = .001$), 5-year-olds ($M = 0.50$, $SD = 0.35$, $p < .001$), and 6-year-olds ($M = 0.64$, $SD = 0.41$, $p < .001$), and between 4-year-olds and 6-year-olds ($p = .036$).

Although not significantly different, explanations by school type are interesting to explore. In explaining real choices, children in non-Montessori schools appealed to functionality somewhat more often (40%) than they appealed to liking (28%), whereas children in Montessori schools appealed to functionality and liking at similar rates (34% and 35%, respectively). For pretend choices, children in non-Montessori schools appealed to ability (e.g., "I don't know how to bake anything," "[Real horses] go really fast and you might fall off," "My mom doesn't let me use knives because I'm not a grown-up yet.") a bit more often (43%) than children in Montessori schools (32%). Children in Montessori schools appealed to liking (30%) more often than did children in non-Montessori schools (17%). Additionally, children in non-Montessori schools explained their pretend choices with reference to experience slightly more often (13% versus 7%); for example, one non-Montessori-schooled child said she preferred to pretend because "I have a pretend kitchen."

Discussion

Preschoolers enrolled in non-Montessori and Montessori schools were asked whether they would rather engage in the pretend or real version of nine different activities that were selected for the study because children could feasibly do the activities in either manner. Compared to peers in non-Montessori preschools, children in Montessori schools chose fewer pretend activities. Hence, while all children ages 4 to 6 preferred real activities to pretend ones, this preference was even stronger for children attending Montessori preschools (with a small-medium effect size). Children's reasons for their activity choices did not vary by school type. Regardless of school type, children preferred real activities most often because those activities were functional (e.g., "I could talk to people [on a real phone]"); this type of explanation increased from age 3 to age 6. When children preferred pretend activities, regardless of school type, they often cited concerns about their ability to do the real version (e.g., "I might fall into the water [if I really fish]"); this tendency also increased with age. We hypothesized that children enrolled in Montessori preschools may more strongly prefer real activities because they are more accustomed to engaging in real activities, or might prefer pretend activities because for at least 15 hours a week during the school year, they are not offered an array of pretend implements. However, school type did not figure differently in children's explanations of their choices. To some degree, type of school may have surfaced in the choices themselves: children in Montessori schools preferred cutting vegetables—an activity they likely experienced in their classrooms as they prepared their own snacks—more than children in non-Montessori schools did.

This study sheds light on an important issue in Montessori education relative to other preschool programs. Montessori education has been criticized for its lack of support for pretending (Kirkham & Kidd, 2017; Soundy, 2009), yet it appears that the children do not relish it; like their peers in non-Montessori preschools, they prefer to engage in real activities over pretend ones. They see the functionality of real activities, comment on their usefulness, and express liking being helpful by doing the real thing. These findings align with Dr. Montessori's observations. Perhaps many educators, in their concern about preschools' greater focus on academics (Bodrova, 2008; Kemple et al., 2015), may promote pretend play at the expense of giving children real and useful activities. Montessori education lacks toys and pretend-play materials but allows children to move around, explore, make choices freely, and work with their peers and with real materials (Lillard, 2013). Thus, Montessori education shows that the opposite of play does not have to be sitting in a chair listening to a teacher, and Montessori education provides a way to consider how real activities may be implemented in classrooms in ways that allow children to feel they are doing something useful.

In this study, children attended at least seven different Montessori schools. The fidelity of Montessori implementation can vary greatly (Lillard, 2012; Lillard & Heise, 2016), and so it is possible that children in some classrooms were exposed to more opportunities to engage in pretend play than would be expected in the classic curriculum. The number of Montessori schools included in our study sample is a strength,

suggesting we were more likely to have captured a range of Montessori implementation rather than a single model.

Limitations of this study should also be noted. First, the sample size was relatively small and lacked diversity; most children were White and middle class. Children of different social classes and ethnicities may have different preferences and explanations. Second, the justification portion of the study relied on children's ability to give verbal explanations, so justification patterns need to be interpreted with caution. Younger children often repeated "because I like it" in response to the justification questions, whereas older children were able to come up with more-complex answers, such as "because we have to [cut real vegetables] because it is healthy for you to eat." Verbal and cognitive abilities may explain the age differences more so than actual reasons.

Third, the pretend activities used here represented only one facet of pretend play: activities that are very similar to their real-world equivalents. Therefore, we cannot say whether our findings generalize to other types of pretend play. Children's interest in pretend may be greater when fantastic content is included or when role play, rather than a particular pretend action, is the focus of the activity.

Fourth, in this study, children were not randomly assigned to school groups. Consequently, it is possible that families of children who attend Montessori schools may have different home environments, too. Perhaps Montessori families also allowed children more opportunities to experience real activities at home because children have experience with those activities in the classroom, or they chose Montessori education because they wanted their children to have these experiences. Therefore, we cannot tease out Montessori education as the single causal factor that leads to decreased interest in pretend activities: varying home environments (e.g., access to pretend or real materials, needs of the particular household, level of adult supervision), parents' philosophies (e.g., how much they value children's practical life experiences over playing, how they judge children's abilities, how they view children's roles in society), and children's temperament (e.g., more or less active, shy) likely relate to school choice and affect children's activity preferences as well.

Finally, the present findings raise new questions for future study. For example, what unique role may school type, independent of other factors, play in children's activity preferences? If children value real activities, then why do they engage in pretend play? And does experience with real tasks provide the developmental benefits that Dr. Montessori (1949) claimed it does? Answers to these questions will suggest whether and how to implement pretend play and real activities into preschool classrooms to best promote children's development.

Conclusion

Consistent with Dr. Montessori's observations, children preferred real activities to pretend ones, and this preference appeared more pronounced for children enrolled in Montessori schools than for children enrolled in non-Montessori preschools. Although many educators and researchers raise concerns about not including pretend play in preschool classrooms, children in Montessori classrooms expressed a preference for engaging in real activities that was even somewhat stronger than the preference shown by children in other preschool environments, suggesting that their classroom environment was, in fact, well aligned with their preference. When Dr. Montessori saw children ignore or break pretend materials, she said,

> *The real trouble is that children have no real interest in these things, because there is no reality in them. It is the misunderstanding by the adult that has led to this life of lack of attention on the part of the children; this useless life, a mockery of life instead of real life…the longer [a child] lives in this environment full of toys, the less capable [the child] becomes of adapting himself to the real environment.* (Montessori, 1949, pp. 241–242)

Might it be that, as Dr. Montessori stated, engaging in pretend play at the expense of real activities is useless or possibly even in some cases harmful to children? In learning environments, greater interest is related

to greater motivation and engagement, which leads to learning and achievement (Blumenfeld, Kempler, & Krajcik, 2004). The choice between work and play may seem binary, but Montessori education's philosophy of engaging children in real activities suggests a different perspective: Children gravitate to real, practical activities; by supporting their interest, we may facilitate greater learning in the classroom.

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Teacher-Centered Mentorship as Meaningful Professional Montessori Development

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Abstract: A real-time, multidimensional, professional-development program that is connected to both practice and school culture was delivered to a group of Montessori teachers with the goal of improving teaching practices and increasing student success by exploring the potential benefits of mindfulness, structured reflective practice, and teacher-centered mentorship (i.e., clinical supervision), A case study of each participant and of the cocreated professional-development learning communities revealed that the program supported teacher growth and efficacy. Four themes emerged from participants' experiences: the importance of mindfulness as a precursor to reflection and mentorship, the creation of communities of trust, the benefits of structure and focus, and the role of supportive accountability in improved practices. The study provides preliminary evidence for the use of multidimensional and teacher-centered professional-development programs to improve teaching practices. The research study has implications for administrators, teachers, and future research.

Too often, the professional development (PD) provided to teachers is ineffective and does not result in improved outcomes for their students (Borko, 2004; Desimone, 2009; Rhoton & Stiles, 2002). This phenomenon is a source of great concern because research shows that effective teaching practices play a pivotal role in student achievement and success (Kim & Seo, 2018; Rockoff, 2004). Accordingly, it is critical that all teachers experience PD that is highly effective. There is significant evidence that, to be effective, PD must be engaging, reflective, empowering, collectively participatory, and connected to teachers' practices and classrooms (Desimone, 2009; Nolan, Hawkes, & Francis, 1993). Research indicates that mindfulness, reflective practice, and clinical supervision are components of this type of effective PD (Acheson & Gall, 2011; Jennings, Lantieri, & Roeser, 2012; Larrivee, 2008; Nolan et al., 1993; Rodgers, 2002; Roeser, Skinner, Beers, & Jennings, 2012).

This study was conducted to explore the use of mindfulness, reflective practice, and clinical supervision in a PD program for Montessori Early Childhood and Elementary teachers. The program contains several key components of Desimone's (2009) framework for effective PD: content focus, active learning, coherence, significant duration, and collective participation. Desimone (2009) argued that these components are

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essential for producing positive outcomes from PD experiences. The study also aligns the PD program with Acheson and Gall's (2011) work calling for PD that is "interactive rather than directive, democratic rather than authoritarian, and teacher-centered rather than supervisor-centered" (p. 8).

Given the lack of literature regarding the use of a PD program incorporating the interwoven aspects of mindfulness, reflective practice, and clinical supervision, this study was exploratory in nature; its purpose was to explore teachers' experiences as they progressed through the collaborative, 8-month program. Because teachers' practices matter, effective PD has the potential to improve their practices and the outcomes for their students. In the following sections, we discuss the conceptual foundations for the study, provide an overview of methods, examine the study's findings, and, finally, contemplate the implications of this study's findings for teachers, administrators, PD providers, and education researchers.

Conceptual Foundation

As individual constructs, mindfulness, reflective practice, and clinical supervision have been widely discussed in the literature for at least the last two decades. However, studies exploring the intersection of these three concepts as a teacher-centered PD model are less prevalent. Employing a teacher-centered PD program featuring mindfulness, reflective practice, and clinical supervision drives the conceptual foundations of the present study.

Teacher-Centered Mentorship

The term *teacher-centered mentorship* (TCM) is used in this study as a modification of the well-known term *clinical supervision*. The term originated in the medical profession, where it has been used for decades to describe a process for improving the specialized knowledge and skills of practitioners. In education, the clinical-supervision process involves observations that are shared with teachers to assist them in examining their own practices and ultimately in continually improving those practices. In this study, teacher-participants were paired and grouped (according to the age levels of the children they taught) so that they could observe one another's teaching. These colleagues could then offer each other a fresh perspective, helping improve both the observed teacher's practice and the experiences of the students (Zhang, Liu, & Wang, 2017).

This study took place in an independent Montessori school. The school is considered independent as it is not governed by a public system or a religious entity. The project team comprised several researchers, each of whom had comprehensively studied one of the individual constructs. The project team used their specialty areas of expertise to create and deliver the PD program and to conduct this research study. In Montessori classrooms, teachers are trained to observe children and to offer individualized support and coaching for each child. TCM offers teachers the same opportunity, supplying the unique support and coaching each teacher needs. Maria Montessori believed that children in her multiage classrooms formed relationships and served as teachers for one another (Montessori, 1989). This outcome is possible in a TCM model, too: school administrators have as many professional developers as they have teachers.

Literature Review

Mindfulness

The last 15 years has seen an explosion in research on the practice and benefits of mindfulness in almost every sector of society; however, there is a limited body of research examining the role of mindfulness in clinical supervision or the PD of educators (Roeser et al., 2012). According to Shea, (2016), the proliferation of mindfulness was pioneered in large part by Jon Kabat-Zinn and his original mindfulness-based stress reduction program to help patients with chronic pain and suffering. Mindfulness practice derives from Buddhist philosophy dating over 2,600 years ago and has been adapted into a secular practice in Western culture (Shea, 2016).

Mindfulness meditation is the practice of moment-to-moment, nonjudgmental awareness. According to Kabat-Zinn (2013), we can nurture a mindful stance by considering ourselves impartial witnesses and by stepping away from the voice of judgment within us. Mindfulness is a simple yet difficult practice that cultivates one's ability over time to observe the reality of one's existence without avoiding or changing its characterization to fit a personal worldview. Practicing mindfulness can help to quell habitual reactive tendencies (Siegel, 2010). Mindfulness practices include conscious breathing, sitting and walking meditation, awareness of reactions to thoughts and emotions, and light yoga, all of which emphasize nonjudgmental acceptance. In teaching practice, mindfulness can take the form of increasing awareness of one's thoughts and reducing reactions that hurt one's teaching practice. Before teaching, mindfulness may take the form of light yoga or simple conscious breathing. The consistent formal practice creates structural brain changes that positively alter a person's perception of pain or difficulty, which eventually translates into desirable qualities such as increased attention and focus, empathy, and compassion (Davidson et al., 2003; Kabat-Zinn, 2013).

Mindfulness in clinical supervision within the counseling and psychological fields has been shown to enhance the experiences of both supervisor (i.e., mentor) and supervisee (i.e., mentee), both cognitively, through attention and focus, and by cultivating empathy and compassion (Carroll, 2006, 2009). Some benefits of clinical supervision mirror those of mindfulness practice, such as better stress management, increased self-awareness, and greater self-efficacy. Including mindfulness in clinical supervision helps supervisors accept teachers' weaknesses (Dray & Wisneski, 2011). In the counseling and psychology professions, supervision is a restorative process that may improve teaching performance and reduce burnout in the stressful mental health fields (Bégat, Ellefsen, & Severinsson, 2005; White & Winstanley, 2014).

Studies show that the benefits of mindfulness practice for teachers include emotional awareness and self-regulation (Jennings et al., 2012), as well as a calm disposition when dealing with challenging classroom behaviors (Jennings & Greenberg, 2009; Roeser et al., 2012). These practices may also prepare teachers for authentic reflection and self-assessment, promoting open-mindedness about personal growth without fear of judgment. New research, while preliminary, indicates mindfulness practices may also serve as a restorative process for teachers and may improve their overall disposition and ability to develop a positive rapport with students and to create an engaging learning environment (Flook, Goldberg, Pinger, Bonus, & Davidson, 2013; Frank, Reibel, Broderick, Cantrell, & Metz, 2013; Roeser et al., 2012, Roeser et al., 2013).

Reflective Practice

Since the opening of Dr. Montessori's Casa dei Bambini in 1907, the topic of reflective practice in education has commanded the attention of many researchers and theorists who have examined the application and outcomes of reflective practices among teachers and their students (Craig, 2010; Darling-Hammond, 2006; Del Carlo, Hinkhouse, & Isbell, 2010; Dewey, 1910; Rodgers, 2002; Schussler, Stooksberry, & Bercaw, 2010). Professional reflective practice involves the cyclical and increasingly complex nature of contemplating one's experiences in the context of educational theories. The cyclical practice continues with purposefully and methodically considering educational theories in the context of one's own experience (Furtado & Anderson, 2012); it represents a deeper, professional reflection that involves carefully describing one's professional thinking to find a pathway to improved teaching practices (Rodgers, 2002).

Professional reflective practice can be viewed as educators' exhaustive study of themselves in the arena of their practice (Meier & Henderson, 2007). Further, professional reflection for teachers is a frequent piece of PD activity (Moss, Springer, & Dehr, 2008). Guskey's (2002) definition of PD programs—"systematic efforts to bring about change in the classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of students" (p. 381)—clarifies the relationship between reflective practice and PD. Additionally, professional reflection can be a starting point for teachers in conducting their own practical action research to take charge of their own PD (Roberts et al., 2010). Professional reflection has

been a key component of the recommendations of major national organizations whose missions focus on defining professional standards for educators (Council of Chief State School Officers, 2011; Lieberman & Miller, 2011; National Board for Professional Teaching Standards, 2002). Moreover, the use of reflective evaluative tools in the development and assessment of teachers is found in independent teacher-evaluation systems and in state standards for educators (Danielson, 2007; Ohio Department of Education & Ohio Educator Standards Board, 2007; Wilson, Freeman-Loftis, Sawyer, & Denton, 2012; Wisconsin Department of Education, 2013).

Increased understanding of the various levels of reflective practice can lead to improved assessment of reflective practices. The improved assessment, in turn, provides a better chance for educators to move through the series of levels, push themselves out of their comfort zones, and become better teachers who create learning environments of inquiry (Rodgers, 2002). In her 2008 article, Larrivee described the development of an assessment tool "that could be used to establish the level of reflection engaged in by a teacher candidate or a practicing teacher [and to] develop intervention strategies to facilitate movement towards higher levels of reflection" (p. 358). Through her research, Larrivee developed the Survey of Reflective Practice as an instrument for assessing the development of reflective practices. The survey identifies four distinct levels of reflective practice: prereflection (i.e., interpreting teaching situations without thoughtful association to other contexts), surface reflection (i.e., examining teaching methods, limited to how best to achieve scripted objectives), pedagogical reflection (i.e., thinking frequently about how to improve teaching practices to make the best possible impact on students' learning), and critical reflection (i.e., engaging in ongoing reflection and critical inquiry concerning teaching actions as well as thinking processes; Larrivee, 2008).

Clinical Supervision or Teacher-Centered Mentorship

A review of research on clinical supervision or TCM reveals several important points. The term *clinical supervision* was first applied to the education profession by Morris Cogan in the 1960s while he coordinated the Master of Arts in Teaching program at Harvard University (Pollock & Ford, 2009). The term *clinical* is suggestive of a relationship between a supervisor and a teacher in the school setting (Acheson & Gall, 2011). The goal of clinical supervision, or TCM, is to provide teachers with objective feedback on the entire instructional process. This mentorship helps teachers develop new instructional strategies and classroom-management skills while increasing awareness of their practice and thus ownership of their continual growth and improvement.

Through clinical supervision (i.e., TCM), new teachers develop the ability to receive feedback from other professionals. Mentor-teachers and supervisors observe and comment on new teachers' challenges and their strategies to resolve them. Through this process, teachers can develop a professional attitude about continuous PD, engaging in self-development as a career-long effort (Acheson & Gall, 2011). Teachers thereby become aware of their responses to classroom challenges and become more competent.

Researchers have identified several positive effects of clinical supervision. Glickman and Bey (1990) found teachers had an increased ability to reflect on their instruction and use higher-order thinking skills. In addition, collegiality, openness, and communication improved between teachers and supervisors. Acheson and Gall (2011) found teacher retention improved while teacher anxiety and burnout decreased. Additionally, these researchers found teachers had a greater sense of autonomy, personal efficacy, and self-growth. Furthermore, teachers reported an improved attitude toward the supervisory process, and both student achievement and attitude improved (Acheson & Gall, 2011).

In 1993, a series of six different clinical-supervision case studies, which included a wide range of teachers with varying tenures, revealed positive changes in the productivity and instructional qualities of the teachers involved, regardless of subject or length of experience (Nolan et al., 1993). Their analysis revealed five commonalities: the development of collegial relationships, the ability to address classroom challenges, a reliable and continual supervision process, reflection on actual teaching events, and observations that pro-

vide an opportunity for improvement. These themes illustrate key considerations of a clinical supervision or TCM model.

Methods

A case study approach was used to answer several questions.

- How do Montessori Early Childhood and Elementary teachers experience an integrated PD program that contains mindfulness, reflective practice, and teacher-centered mentorship (i.e., clinical supervision)?
- How do the teachers use the new knowledge to improve their teaching?
- Do the teachers believe they improve their teaching practices as they participate in the PD program containing mindfulness, reflective practice, and teacher-centered mentorship (i.e., clinical supervision)?

Because there is a dearth of research exploring the intersection of mindfulness, reflective practice, and clinical supervision as a TCM PD model, this program represented a unique, bounded case (Yin, 2013) that focused on participants' experiences in their respective communities as the unit of study. This bounded case allowed us to investigate, where the context and phenomenon are somewhat blurred, participants' lived experiences during the integrated PD program (Yin, 2013).

The context for the case was an 8-month-long PD program at an independent Montessori school in an economically and racially diverse Midwestern suburb that enrolls approximately 100 students from preschool through sixth grade. The school is affiliated with the American Montessori Society and adheres to Montessori philosophy and practices, including grouping the children in the same classrooms according to the following age guidelines: 3–6 (preschool and kindergarten), 6–9 (Elementary), and 9–12 (also Elementary). The study included three Elementary teachers and two preschool/kindergarten teachers. All were employed at the school and, highly encouraged by the head of school, opted for enrollment in this PD program. Only one teacher (at the Elementary level) opted out of the program. She was enthusiastic about the program, according to the head of school, but could not participate for personal reasons. The preschool and kindergarten teachers were relatively new to one another, while the Elementary teachers had been teaching together for several years. The study took place in the school, and most meetings and observations occurred in participants' classrooms. Teachers could stop participating in the PD program or research study at any time without penalty.

Before the school year began, we delivered the PD program, which contained detailed plans for the academic year (see Appendix A). The PD program began with a half-day retreat during which we used description, conversation, and activities to introduce participants to mindfulness, reflective practice, and clinical supervision. At the end of the retreat, we provided additional resources and a specially created website where participants could access retreat materials. Early in the school year, we asked participants to choose a practice from a list of mindfulness practices and to complete a survey that helped them identify their level of reflective practices according to Larrivee's (2008) Survey of Reflective Practice, which identifies four distinct levels of reflective practice. We also introduced the participants to the Framework for Teaching (Danielson, 2013) for reflecting on and assessing their own practices. The framework is a "research-based set of components of instruction, aligned to the InTASC [Interstate Teacher Assessment and Support Consortium] standards, and grounded in a constructivist view of learning and teaching" (Danielson Group, 2018). The InTASC standards are a set of ideal core teaching standards that specify the knowledge and abilities teachers should have.

In late October, we held an additional PD session to expand participants' emerging skills in implementing mindfulness and reflective practice. Learning experiences included strategies for becoming more compassionate toward themselves and guided practice with the Survey of Reflective Practice (Larrivee,

2008) and the Framework for Teaching (Danielson, 2013). In the following weeks, we grouped the participants according to the ages of the children they taught so that they could mentor one another. We observed and supported the participant groups as they employed the TCM protocol that provided them with a clear sequence for addressing growth areas and improving practices (see Appendix B).

In January, we provided additional resources to the participants (i.e., teachers enrolled in the PD program) in all three areas of the PD program through an additional faculty meeting and new resources on the website. Participants continued their efforts in mindfulness activities and reflective practices. In February, we asked participants to identify new or continuing areas of growth using the research-based framework. Once again, we observed and supported participants in their use of TCM using the same protocol used during the first semester.

To provide evidence for the teachers' experiences in the TCM PD program, we collected data on teacher-participants throughout the academic year via *quick writes*, check-in survey questions, and researcher observations. We adopted quick writes from learning theory that posits the strategy as an activator of students' knowledge that requires students to informally and quickly discuss a given topic (Green, Smith, & Brown, 2007; Nunan, 2003). This activation of students' knowledge, combined with the strategy's ability to serve as a formative assessment to ascertain increased understanding (Bass, 2003), allowed the quick writes to serve as both professional learning for the teacher-participants and as a data set for the professional-development programmers. We administered three quick-write sessions in which the teacher-participants answered a series of questions about their understanding of teacher-centered PD, including experiences with mindfulness, reflective practice, and clinical supervision. We conducted these quick writes just prior to the start of the program (i.e., at the beginning, middle, and end of the academic year; see Appendix C).

In addition, we asked the participants to answer a set of check-in questions during each week of the program (see Appendix D). These questions were used to keep the teachers focused on the PD program. Check-in questions ascertained the frequency of the practices in the three areas of the program by asking the participants to indicate on a scale ranging from *never* to *always* the extent to which they engaged in the practices. The responses also served as a data set representing our understanding of the participants' firsthand experiences.

Lastly, we observed the participants throughout the PD program. We recorded observation narratives on an open-ended form that tracked activities and conversation and also allowed for later memos, codes, and theme development (see Appendix E). The observation notes also created a narrative of professional-development interactions for the individual participants, as well as for the professional communities they formed. We completed member checks to gather participant feedback on the written narratives and to validate our participants' experiences (Lincoln & Guba, 1985). We accomplished this by sharing the written narratives with the participants to confirm and clarify their lived experiences with the PD program. Further, by creating and maintaining a strong participant–researcher relationship, these member checks established a high degree of trustworthiness in the study's data set (Carlson, 2010).

We used quick writes, check-in survey responses, and observation data to create vignettes for each participating teacher. We then used a process of inductive coding and pattern coding to analyze these vignettes from the perspective of the communities they formed during the PD program (Miles, Huberman, & Saldana, 2013) to identify emergent themes. Inductive coding let us review all the data to understand and organize participants' perspectives and experiences. To find themes, we examined the discovered codes for patterns of shared experiences among the participants.

Findings

The purpose of the study was to explore the use of three interrelated aspects of a PD program for Early Childhood and Elementary Montessori teachers: TCM (i.e., clinical supervision), mindfulness, and reflective practice. The study focused on teachers' experiences as they used the tools and strategies included in

the PD program. We taught participants about the benefits of mindfulness and the impact of spending just 5 to 10 minutes a day in a mindful state through an activity contained within a list of mindfulness activities (see Appendix F). In the domain of reflective practice, we trained participants how to use the Survey of Reflective Practice (Larrivee, 2008), mind-mapping strategies, the Framework for Teaching (Danielson, 2013), and resources for evidence-based practices. In the TCM domain, the TCM process involved participating teachers mentoring one another. Therefore, they were explicitly trained in planning initial meetings, developing observable goals, observing each other's practice, and following up with support and suggestions for new strategies that might lead to improved teaching practices and better learning experiences for their students.

The program focused on one key challenge each semester of the program. While we understood that teachers face multiple challenges, focusing on one challenge let us provide strategies for deep learning, including metacognition and critical thought (Hattie, 2013), such as explicit instruction, goal setting, modeling, application, and feedback. This focus on one challenge allowed participants to construct meaning by placing significance on new information, thus creating a deeper learning experience (Biggs & Tang, 2007).

Many participants gained insight into their own teaching practices, as shown in the individual vignettes below. The vignettes show how participants expressed their evolving PD and how they interacted. Accordingly, a discussion of the PD communities formed follows the individual participant vignettes.

Vignette: Sami

Pseudonyms have been used to provide anonymity and confidentiality to the participants in this study. Sami was a veteran teacher in one of the school's Elementary classrooms. She felt that the evaluation processes over the course of her career at the school were helpful, particularly in helping her see her strengths and weaknesses. Further, she felt supported in working on the goals set thereon. When asked about her experiences with TCM, she said that she had not heard of that term but that it seemed natural for a Montessori setting.

The tracking survey revealed that her feelings about school varied from week to week. However, she often made time for mindfulness and reflective practice. She said that her responses to children were always peaceful. She also sometimes found it challenging to stay calm. In her middle-of-the-year quick writes, Sami indicated that she valued the specific focus provided by the current PD program and said that focusing on one challenge not only supported her in addressing that challenge but also provided her with a procedure to address other challenges.

Sami received mentoring from Thom, another Elementary teacher at the school. During the first semester, the challenge for Sami was to find a new teaching strategy to increase the active participation of an immature, shy, and reluctant sixth-grade girl. Thom documented her challenge and the observable actions that Sami would take to address it. Sami then put the actions, such as explicit instruction, into her practice. Thom observed and shared his notes with Sami, informing Sami that she was making progress with the student's communication challenges. The mentoring continued into the spring, with Sami adding new practices, such as role play, to support the student's growth. These new practices increased the student's capability to advocate for herself, talk appropriately to her friends, and participate in class discussions.

In end-of-year discussions, Sami said that mindfulness activities helped her view her practices nonjudgmentally. However, she did indicate difficulty in making time for these activities and reiterated her midyear appreciation of focusing on a single, specific challenge for PD:

> *I am my own worst critic and see so many areas I want to improve in and not enough time to do everything I want to do. By having one challenge, I was able to see and appreciate my growth. I look forward to applying this strategy in my future.*

Vignette: Thom

Thom was another veteran teacher in one of the school's Elementary classrooms. He described his experience with his administrator during evaluations as fair and helpful. He said that mindfulness was familiar to him because of a workshop he had taken a few years before. He thought reflective practice involved discussing his teaching day with his administrator and coteacher and reported that TCM was a new concept.

Thom also conveyed important information when answering his weekly tracking surveys. His responses revealed that, as for many teachers, some weeks were better than others, and some weeks he had more time to practice focused reflection than others. Data from early in the year revealed that he perceived his reflection skills at the lower prereflection and surface levels. However, as the year progressed, so did his reflection levels, to the higher pedagogical and critical levels.

During the second semester, Thom identified a challenge in working with a student who was not in his classroom but with whom Thom often interacted in the school's Elementary community. This student frequently acted out with other faculty members. Thom was able to reach this student but was challenged by how to support the student's ability to behave appropriately with all faculty members and staff. Thom also saw working with this student as a preventative measure, in that the student was likely going to be in his classroom in the next academic year. Thom, with the support of Kim, the student's classroom teacher, developed a plan of observable actions for him to take with the student, including sitting with him to better understand the triggers that angered or upset him. Thom then asked the student how he could calm himself down.

Kim wrote detailed notes about how Thom supported this student. She mentioned how consistently Thom listened to and acknowledged the student's feelings. By the end of the semester, Thom and the student made an action plan that gave the student a safe place to calm himself down. The student used the new strategy successfully, and his acting-out behaviors decreased.

As the academic year ended, Thom reported that all aspects of the TCM PD program greatly affected his practice, saying that the process was "connected" and "enjoyable." He also commented that, by framing a student's challenge as his own teaching challenge, he grew as a teacher and more progress was made in improving the student's behavior than he had thought possible.

Vignette: Kim

Kim had been teaching for several years. Kim's initial quick writes indicated that she loved PD, as it "sparks and solidifies" the things she learns as a teacher. She was knowledgeable and enthusiastic about the process of evaluation and appreciated being observed by a mentor who affirmed her strengths and identified areas for improvement. She was somewhat familiar with mindfulness and was very familiar with reflection, which had been part of her work with her school administrator. She did not know exactly what TCM was but thought it might be similar to faculty PD activities used at her school. She said that she liked collaborating with other teachers.

In her weekly tracking surveys, Kim indicated that she had many good teaching weeks. She practiced mindfulness every week of the study except one, when "the classroom had high energy." She indicated that, while she was a novice in its practice, mindfulness helped to "energize" her and helped her to be "a good role model." She practiced tracking reflective thoughts most weeks. Her reflective thoughts remained at the pedagogical level throughout the entire study in that she consistently analyzed the relationship between teaching practices and student learning, sought ways to connect new concepts to students' prior knowledge, and engaged in constructive criticism of her own teaching.

Kim's challenge in the academic year was to improve her practice with a student who consistently did not follow academic or classroom behavioral expectations. After Kim discussed with her mentor, Sami, the strategies she was using, she developed a new set of strategies to support the student. Kim and Sami discussed ways to focus on the student's needs, including attention from Kim and structure from a behavior

modification protocol that used positive reinforcement. They decided that Kim would meet with the student at the beginning of each day to support her in goal setting. Sami observed that Kim used the heavier modification reinforcements and made contact with the student before and after each classroom transition. She also observed Kim's use of a behavior chart and of home- and school-based incentives. Kim found her new practices with this student so successful that she decided to continue them into the second semester with the same student, supporting her in becoming more successful in her studies and her behavior.

As the academic year ended, Kim felt very positive about the PD program, noting that her positive feelings stemmed from seeing how the changes she made in her practice positively affected a student's behavior, which in turn improved the overall atmosphere in her classroom. She added,

> *The process helped me know the other teachers better—we had deeper conversations than we normally had. The mentorship gave me a feeling of being built-up. It was also good to have a whole year [of the program] to focus on one child. It helped me be more thoughtful about the activities.*

Vignette: Ruth

Ruth was a first-year teacher in one of the school's preschool and kindergarten classrooms. As such, she started the academic year without experience with evaluation processes as a practicing teacher. Additionally, she had not had any experiences with PD activities. However, Ruth had had prior experiences with mindfulness and reflective practice. The idea of TCM was new to her, and her reaction to it was largely positive.

Throughout the academic year, Ruth indicated through the tracking survey frequently feeling good about her school week. She often felt best about her week when she practiced mindfulness and reflected on her practice using Danielson's (2013) Framework for Teaching. In the middle of the academic year, Ruth said that the current PD was different than she had expected. Before becoming a teacher, she had he had heard that PD involved long meetings on a topic that may or may not be relevant to a teacher's current classroom. She liked that this PD was "self-directed" and that it applied to "the needs of the classroom at that current moment."

Ruth was mentored by Carol, another preschool and kindergarten teacher at the school. During the first semester, Ruth's challenge was to support a child who avoided work during work time. The child not only avoided work, but he also avoided talking about it with Ruth. Carol asked probing questions to better understand Ruth's challenge and took careful notes. The two discussed possible solutions and created a plan to address the child's work avoidance, which Carol observed Ruth put into practice. In a follow-up meeting, Ruth felt more successful and said that having a colleague hold her accountable for a new teaching practice proved helpful in addressing her challenge.

By the end of the academic year, Ruth reported that she had had a "great experience" with the practices and processes in the PD program:

> *In this program, I was instructed to focus on one aspect of my classroom that was a challenge and what could be done to improve it. I used other teachers and some resources that were recommended by those teachers to help me to focus on just one challenge. It was helpful that the program allowed me to focus on what I needed during the semester and work to improve it. It was also nice to have the other preprimary teacher holding me accountable for sticking to my plan of action.*

Vignette: Carol

Carol, while not a first-year teacher, was still a novice and just starting her first year at the school. She also taught in one of the school's preschool and kindergarten classrooms. Her experiences with evaluation processes at her former school consisted of classroom observation and postobservation discussion with a school administrator. Her experiences with PD included book studies and listening to a guest speaker at a faculty meeting. Although she had heard of mindfulness, Carol did not understand it. She had, however, had some experience with mindfulness as a child in dance and yoga classes. She had also had experience

with reflective practice, primarily during her student teaching. Carol loved the idea of being mentored and was excited about TCM.

The tracking survey revealed some high points in Carol's feelings about her school week. She also indicated some challenging weeks during which her work felt extremely stressful and difficult to manage. The weeks she reported feeling good correlated with the degree to which she had been able to practice mindfulness and reflection activities. Conversely, the more stressful weeks were when she had been unable to practice mindfulness and reflection activities. At the midpoint of the academic year, Carol reported that the TCM program helped her reach out to her peer teacher Ruth for structured, thoughtful support and advice.

Ruth, another preschool and kindergarten teacher at the school, served as Carol's mentor. The challenge for Carol was with a classroom-management issue. She had a student with autism whose behavior was being mimicked by other children in the classroom and causing inappropriate laughter. Ruth listened carefully and empathetically. Carol had already researched a possible lesson and discussed it with Ruth. After the two teachers discussed the issue and the lesson, they created some strategies and Ruth observed the lesson. In a follow-up meeting, Carol said that the lesson had not had the desired effect. The teachers met again, referred to some ideas from a classroom-management expert they had heard at a conference, and made another plan to implement in the second semester. The new plan, which took advantage of the fresh start of the second semester, had better results.

By the end of the academic year, Carol reported that the PD program had allowed her to focus on identifying growth opportunities in her practice and supported her in meeting those challenges and improving her practice. She felt stronger in her ability to stay "present in the classroom and observe" herself in an open and nonjudgmental manner. She also said that the PD program created "a space for mindfulness to occur in order to better focus on the details for later reflection with issues as they pertain to the education of children." She said that the PD program allowed her to be "more present" in reflecting on her own practice and that being more present allowed her to support more positive behaviors in her students.

Professional Development Learning Communities

In reviewing the data, we clearly observed that, while all teacher-participants had their own experiences with the PD program, their fellow teacher-participants in this program influenced their experiences, especially those they worked most closely with. Accordingly, the vignettes align with the socioconstructivist view that knowledge is constructed through interactions and dialogue with others (Vygotsky, 1978). The influence of shared understandings of fellow teachers largely influenced the professional growth of each participant. Several themes emerged from the data sets that captured the experiences of the cocreated PD communities.

Mindfulness as precursor. All participants appreciated learning how to incorporate mindfulness into their practice. They found that slowing down and practicing mindfulness allowed them to view their own practices nonjudgmentally. They noticed how their own practices might affect student learning and growth. Researcher observation revealed that, even when topics were challenging, participants actively listened to each other, expressed compassion and curiosity, and asked supportive, clarifying questions.

A community of trust. Participants reported feeling more connected to one another and said that each completed segment of the TCM program brought them closer together. They credited this closeness to the trust and relationships they built in the process. This result is consistent with Desimone's (2009) assertion that collective participation is a critical feature of effective PD. We observed the participants construct safe PD communities and create space for new ideas and teaching strategies. This interdependence and the safe spaces encouraged them to have rich and multifaceted discussions about their practices and about how to improve children's progress and growth.

Structure and focus. Participants reported that having a structure for reflecting on their practice helped them focus on specific challenges in their practice. Identifying an opportunity for growth was influenced by reflecting on their unique teaching situation within a framework that helped define the specific practice targeted for improvement. A specific opportunity for growth or a teaching challenge was sometimes identified for an individual student and at other times in an issue for a group of students. In both cases, structured reflections led to teachers' areas of focus for growth.

Supportive accountability and change. All participants reported that the TCM PD program and their interactions within their communities brought them a supportive accountability that kept them focused on improving their practices and growing as educators. We observed enthusiasm and increased self-efficacy during participants' meetings, as they mentored and challenged one another to think about how their practices affect student growth and learning. All participants in both PD communities were excited to see how their improved practices resulted in perceived improvement in their students.

Results

The Montessori Early Childhood and Elementary teachers in this study experienced an integrated PD program that contained mindfulness, reflective practice, and TCM (i.e., clinical supervision) in unique ways, with some commonalities. The teachers in this study used new knowledge to improve their teaching by starting with mindfulness practices that allowed them to examine their practice in a nonjudgmental way. By doing so, Sami improved her use of explicit instruction, a structured and direct methodology for teaching academic skills (Archer & Hughes, 2011). Other teachers in the study improved their implementation of Universal Design for Learning, a way of thinking about teaching that gives all students an opportunity for success. This was evidenced in Thom's and Kim's abilities to provide choices for self-regulation through "personal goal-setting and expectations," Ruth's ability to provide opportunities for engagement through "sustained effort and persistence," and Carol's ability to provide options for executive functions (Meyer, Rose, & Gordon, 2014). The Montessori teachers in this study believed they improved their teaching practices as they participated in the PD program. Further, the teachers believed they improved their practices, looked forward to using newly discovered tools in their practice, and formed a stronger learning community.

Conclusion

This research study provides rich evidence that the Montessori Early Childhood and Elementary teachers in the study setting had positive and practice-changing experiences in this integrated PD program. The evidence also demonstrates that we established credibility, transferability, dependability, and confirmability in the qualitative study (Lincoln & Guba, 1985). The PD program included mindfulness, reflective practice, and TCM. Further, it demonstrated that mindfulness practices layered with structured reflection activities enable teachers to identify appropriate, specific areas of practice improvement through supportive accountability in a nonjudgmental, connected, and safe space. Importantly, the interwoven and meaningful PD program resulted in a depth of inquiry among its participants, revealing positive changes in their perceived reported self-efficacy, improved instructional practices, and perceived success for the students in their classrooms.

Little recent research in teacher PD has been conducted in a Montessori setting. According to the North American Montessori Teachers' Association (2018), there are an estimated 4,500 public and private Montessori schools in the United States. Despite the schools' unique philosophy and pedagogy, teachers in these schools have not been able to use PD programs that are grounded in the context in which they work. Furthermore, mainstream educational research looked at this study's three elements (i.e., mindfulness, reflective practice, TCM) separately and has not considered them as part of an intermingled PD program. Because of the importance of teacher quality and its role in student achievement, the present study provides a window on how teachers experience a PD program composed of mindfulness, reflective practice, and TCM components in a Montessori setting.

Researchers studying the PD of teachers in non-Montessori settings can also benefit from this study's findings on the potential impact of a meaningful PD program that intertwines the three elements. These researchers may wish to more closely investigate the effects of this type of program to determine its effect on student growth and development. This approach to supporting teachers may also lead to an engaged, empowered, and effective teaching force.

Limitations and Further Research Needs

The findings of this research study provide some evidence that a meaningful and integrated PD program centered on teachers and their classrooms can have a powerful effect on teachers' perceived efficacy and practices aimed at improving student growth. Nevertheless, it is important to note the limitations of the study's approach. In particular, the small sample size and exploratory nature of the study limit its generalizability. We intend to develop this line of research by gathering data for subsequent iterations of this PD program and incorporating results into future studies. For example, adding third-party observers of classroom practices both before and after the PD program will provide further understanding of the impact of the program on teaching practices. Also, using larger sample sizes and multiple and diverse school settings will provide valuable information about the general effects of this type of PD program. We hope that the findings of this study encourage additional research into the use of multidimensional and teacher-centered PD programs. Further, we look forward to supporting data from quantitative studies of the effectiveness of such programs.

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Appendix A
Professional Development Yearly Plan

August	• Project team o Collects quick-write data about teacher experiences with evaluation, PD (PD), and the components of teacher-centered mentorship (TCM) PD program o Conducts learning experiences and practice with reflective practice, mindfulness, and TCM (i.e., clinical supervision)
September	• Participants begin weekly work including: o View and absorb resources on Danielson framework o Practice from menu of mindfulness practices o Mentally track levels of reflective practice o Respond to weekly surveys
October	• Project team o Conducts learning experiences and practice with reflective practice, mindfulness, and TCM (clinical supervision) (including role play) o Leads teachers in conducting self-evaluation of instructional domains in Danielson framework
November	• Project team o Observes and supports TCM coaching during initial TCM meeting using form that assures following sequence and outcomes o Observes and supports TCM coaching during follow-up TCM meeting using form that assures following sequence and outcomes
December	• Project team o Collects quick-write data about teacher experiences with evaluation, PD and the components of TCM PD program
January	• Project team o Conducts learning experiences and practice with reflective practice, mindfulness, and TCM (i.e., clinical supervision)
February	• Project team o Observes and supports TCM coaching during initial TCM meeting using form that assures following sequence and outcomes. o Observes and supports TCM coaching during follow-up TCM meeting using form that assures following sequence and outcomes.
March	• Project team o Collects quick-write data about teacher experiences with evaluation, PD, and the components of TCM PD program o Conducts data verification with participants

Appendix B
Checklist for Teacher-Centered Mentorship

TEACHER-CENTERED MENTORSHIP/CLINICAL SUPERVISION CHECKLIST

Professional Development
2016-2017
Facilitators:
(Circle name of your facilitator.)

Your Name as Mentee:_____
(Please print)
Name of your Mentor:_____
(Please print)

Print the date each semester you turn this in:_____

Each classroom will turn in <u>two forms for each teacher</u> to your facilitator and keep one for yourself since each teacher will be a mentor and a mentee (this will happen each semester).

Goal of TCM/CL: The Goal is the practice of positive professional development of the practicing Montessori teacher. During this year the teachers will learn and practice "mindfulness" and "reflective practice" in order to support the teachers involved with "teacher centered mentorship/clinical supervision". To help the teachers and the facilitators' better support and understand the teaching qualities of each teacher in this professional development program, both the teachers and facilitators for each group of teachers will use Charlotte Danielson's Domain 3 "Instruction" found in the "Framework for Teaching Evaluation Instruction 2013 Edition".

Reminders: (1) Your facilitators will email or phone the teachers she will be supporting this year to set up the date in late Oct. she will be observing in your classroom for 2 hours to fill out the Danielson's Domain 3 "Instruction" checklist. (2) Your facilitator will set up an end of school day meeting in early Nov. (and early March) with her teachers in order to be present in your #1 Meeting listed in item #6 below. (3) The facilitator will be present (Mid November and Mid March) for the two hours on two separate days (unless one TCM can be done in the morning and second TCM can be done in the afternoon of the same day as listed in item #8 below. Two hours on one day for first Mentee and two hours on a second day for the second Mentee (unless both can be done on the same day. One in the morning and one in the afternoon). (4) Final meeting for items #9 and #10 will be in late November or early December (late March or early April 2017) with the facilitator present at the end of your school day. (5) In December 2016 during an all staff meeting after school (4:00 to 5:30) the teachers will again fill out "Quick Writes" about teacher experiences with evaluation/PD and the components of pd program. (The third time the teachers will fill out the "Quick Writes" will be in March 2017.)

Check the appropriate answers to the following questions. Make a copy of these forms for yourself and give your facilitator a copy of each form. (Two forms from each participant due November 2016 and March 2017.)

1. Yes_____ No____ First semester 2016 I turned this Check List Form into my facilitator on the day in November when my facilitator came to support us setting up our challenge with our mentor. *(Second semester 2017 I turned this Check List Form into my facilitator on the day in March when my facilitator came to support us setting up our challenge with our mentor.)*
2. Yes_____ No_____ First semester 2016 I did fill out the Danielson's Domain 3 "Instruction" form during the month of October, after I watched the Video about Danielson's framework found on *[redacted]. This helped me evaluate my teaching skills and helped me pick a challenge I wanted to work on with my Mentor. *(Second semester 2017 I did fill out the Danielson's Domain 3 "Instruction" form during the month of February 2017).*
3. Yes____ No_____My facilitator came in October 2016 to fill out the Danielson's Domain #3 "Instruction" form. *(Second semester 2017 my facilitator did fill out the Danielson's Domain #3 "Instruction" form during the month of February.)*
4. Yes_____No_____First semester 2016 I have been working on "Reflective Practice" by working on (a) "Surface Practice" skills, (b) "Reflective Practice" skills, and (c) "Critical Practice" skills which all (p. 15) support deliberate pause and purposeful slowing down. (I repeated this Second semester Jan. 2017.)
5. Yes_____No_____ First semester 2016 I have been cultivating a focused mind (p.6) through mindfulness practices which are roots of caring, compassion, and empathy. (I repeated this Second semester Jan. 2017.)
6. Yes_____No_____In November 2016 (Again in Feb. 2017.) the Mentee, the Mentor, and the Facilitator in each classroom will meet together *(Called Meeting #1)*, where each Mentee in his/her classroom gave the Mentor his/her observable challenge and listed two to three ways he/she will incorporate new observable methods to solve his/her challenges.
7. Yes_____No_____Each Mentor (Nov. 2016 & Feb. 2017) took notes during the Meeting described in #6 statement above. Then each Mentor takes his/her notes and makes a list of how the Mentee will incorporate new observable methods to solve the challenges.
8. Yes_____No_____Each Mentor (Nov. 2016 & Feb. 2017) and his/her facilitator will watch his/her Mentee for 2 hours during November, taking notes (and video taping the experience if he/she wants to and if every child's parent in the video has signed a written approval that his/her child may be video since the videos will not be seen by anyone except the two teachers in the classroom plus the facilitator of this project) about how the Mentee used his/her observable methods to support the mentee's challenges, which were identified during his/her Meeting #1.

9. Yes_____No_____These notes will be copied and shared with the Mentee and the Facilitator before all three individuals meet again *(Called Meeting #2)* to talk about how the Mentee feels about his/her successes or continuing challenges. The facilitator is present to support this conversation and will answer any questions the Mentee and Mentor have for the Facilitator. (This will happen in Nov. 2016 and Feb. 2017).
10. Yes_____No_____During this *Meeting #2* each Mentee will tell his/her Mentor and facilitator what she/he will add to the plan if something else comes to her/his thoughts or/and the Mentor might also have a suggestion which might help his/her Mentee continue to be successful with the challenge stated in item # 6 above. The Mentor will take notes during this conversation. (This will happen in Nov. 2016 and March. 2017. The facilitator will be taking notes during these meetings).

Yes_____ No_____ I have filled out and copied this form (so I will have a copy) and turned it in to my facilitator first semester by Nov. 2016, and second semester by March, 2017.

3

Appendix C
Prompts for Quick Writes

Prompts for Quick-Writes

1. Describe your experiences with evaluations (by an administrator in your building) as a professional paid and certified educator (if any).
2. Describe your experiences with professional development (in your most recent school) as a professional paid and certified educator (if any).
3. Describe any professional experiences you have had (if any) with mindfulness in conjunction with professional development as a professional paid and certified educator.
4. Describe any professional experiences you have had (if any) with reflective practice in conjunction with professional development as a professional paid and certified educator.
5. Describe any professional experiences you have had (if any) with Teacher Centered Mentorship (Clinical Supervision) in conjunction with professional development as a professional paid and certified educator.

Appendix D
Weekly Check-In Survey

Meaningful PD Survey: Weekly Survey for Meaningful PD Participants

What is your name?

How was your week?

1 Extremely stressful and almost impossible to manage.

2

3

4

5

6 Busy, but a "good" busy and very manageable

Did you get a chance to practice the mindfulness activities?

1 Not at all. I will try again next week!

2

3

4

5

6 I did it! I practiced at least 10 minutes a day every day!

Did you get a chance to track your reflective thoughts? (as directed by [redacted] on audio) ?

1 Not at all this week. I will try again next week!

2

3

4

5

6 I did it! I tracked at least 1 thought per day!

Appendix E
Observation Instrument

Name	Observations, activities, and conversations	Observer memos, codes, and themes

Appendix F
Menu of Mindfulness Activities

Menu of Mindfulness Practices—Choose from these to spend 5–10 minutes a day practicing mindfulness.

Introduction to Activities

- Apps for Teachers
- Strategies for Self-Compassion
- Calm Glitter Jar
- Friendly Wishes
- Self-Compassion Strategies General
- Just Like Me Meditation
- Just Like Me Recording
- Body Scan
- The Guest House
- New Recording
- Evaluate Your Meditation

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Montessori Education in the Ngaanyatjarra Lands

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Keywords: *indigenous, Aboriginal, early childhood, Montessori, student response*

Abstract: This article explores the ways Ngaanyatjarra students in Australia respond to Montessori pedagogy in a remote Aboriginal early childhood context. The article initially presents key literature pertaining to early childhood education, Aboriginal education, and Montessori education in Australia. The qualitative methodology underpinning the research is subsequently outlined. The approach emphasized in this research is that of interpretivism. The data analysis process highlighted three headings: concentration and engagement, student autonomy, and student independence. The findings of this research indicate the potential for Montessori pedagogy as a viable alternative practice of education for remote Aboriginal early childhood contexts, as Montessori pedagogy may align more harmoniously with the cultural dispositions of Ngaanyatjarra students. Finally, recommendations are presented in light of the research.

The education of Aboriginal students has been a major topic of discussion in Australia for decades. When commencing school, Ngaanyatjarra children are disadvantaged by current teaching and learning practices (Department of the Prime Minister and Cabinet [DPMC], 2016). Current data confirm that education targets set by DPMC were not achieved by the target date. These targets refer to infancy and childhood, early childhood education, employment, economic development, healthy lives, and safe and strong communities (DPMC, 2016). One possible reason for not achieving the targets may be that education programs in remote Australia do not culturally align with traditional Aboriginal values related to child-rearing techniques. Specifically, regarding very remote Australia, Osborne (2013) wrote:

> *Western philosophies that underpin mainstream Australian society and the broader education system are at odds with the axiologies, epistemologies, ontologies and cosmologies of Aboriginal and Torres Strait Islanders, particularly in the red dirt contexts of very remote communities.* (p. 5)

My involvement in education in remote communities has prompted this study of the effectiveness of the Montessori approach, an alternative method of education that shows promising evidence of being more harmonious with Indigenous culture, beliefs, and pedagogy.

Significance and Motivation

The study endeavors to describe the effect of Montessori pedagogy through the response of those most closely associated with Aboriginal education: Aboriginal students and the education professionals

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who work with them. The motivation for this research stems from my personal interest and involvement in remote Aboriginal education. I first became interested in remote Aboriginal education when I worked in Kiwirrkura Remote Community (RC), Western Australia, between 2010 and 2012. During my time in Kiwirrkura RC, I came to the belief that the system-mandated method of education in use did not support intercultural practices. I am aware of intercultural and multilingual literature, which could be developed in a subsequent publication. Through conversations with colleagues and by researching alternative methods of education, I realized that Montessori pedagogy may provide a method of education that success in either Western or Indigenous culture. This study was undertaken to provide evidence-based research in Montessori pedagogy within a remote Aboriginal Early Childhood program.

Literature Review

The interplay between the four topics (i.e., Ngaanyatjarra Lands, early childhood education in Australia, Aboriginal education in Australia, and Montessori education) brings into focus the conceptual framework that underpins this research. The question that guided this study was: In what ways do Aboriginal students respond to Montessori pedagogy within a remote Early Childhood program?

Ngaanyatjarra Lands

A large area of Australia is sparsely inhabited (Australian Human Rights Commission, 2008). In 2011, the Australian Bureau of Statistics [ABS] recorded over 60,000 Indigenous Australians living in 1,008 very remote communities in Australia (ABS, 2016; Fordham & Schwab, 2007). *Very remote* is based on the distances people must travel to get to service centers where they can access goods, services and opportunities for social interaction. Within Australia, more than 120 Indigenous languages are spoken (Marmion, Obata, & Troy, 2014). The term *Indigenous Australian* refers to "both Aboriginal people and Torres Strait Islander people" (Harrison, 2012, p. 193). Education for Aboriginal students in remote Australia faces many challenges. One of these challenges is limited access to education services, libraries, technological education, and support (Fordham & Schwab, 2007). Parents, caregivers, and the wider community support their children in learning their first language and culture; however, they are often limited in how they can support their children in education contexts that value Standard Australian English [SAE] and Western knowledge and ways of knowing. The traditional methods of education in the Ngaanyatjarra Lands differ from mainstream practices. Beryl Jennings, a local Ngaanyatjarra elder, commented in Shinkfield and Jennings (2006):

> *How do children learn Ngaanyatjarra way? They learn when Grandpop talks to them. Also they learn by watching—looking at Nanna making* wirra *[digging bowl] or making damper [bread made in the coals of a campfire]…they talk about the activities in Ngaanyatjarra, they copy each other, they play with the same things every day—they are learning."* (p. 24)

Children learn by observation, imitation, and talking in Ngaanyatjarra, their home language, with their family (Australia Children's Education and Care Quality Authority [ACECQA], 2011; Barblett, 2010; Brewer, 2008; Department of Education, Employment and Workplace Relations [DEEWR], 2016; McLachlan, Fleer, & Edwards, 2010; Shinkfield & Jennings, 2006). It is important that these traditional methods of teaching and learning be considered in the current teaching practices and context for remote schooling. If children's first culture and language are not recognized, valued, or integrated into the school curriculum, the children are set up to fail.

Ngaanyatjarra is the most commonly used language in Papulankutja RC (Kral, 2012); parents, caregivers, and the wider community members who have learned Ngaanyatjarra have had limited opportunity to learn SAE. Papulankutja remains highly traditional in cultural terms, and community members regularly participate in major ceremonies that link them to other communities and regions (Ah Kit, 2003). The area around Papulankutja contains some of the most significant sacred sites in the Ngaanyatjarra region. The

Ngaanyatjarra and Papulankutja people have maintained an uninterrupted occupation of their land (Kral, 2012). The people are at the center of the universe, and they hold the key role in management of their land (Brooks, 2013). Brooks (2013) emphasized, "People are owned by the land, rather than owning it" (p. 7). The natural world or country is the "birthplace or inheritance of all Ngaanyatjarra people" (Brooks, 2013, p. 8), and Ngaanyatjarra people refer to their birthplace as "my ngurra, my country" (Brooks, 2013, p. 9). Papulankutja RC members hold this connection to their *ngurra* (country), and children grow up in a culturally and linguistically rich environment. By the time children arrive at formalized schooling, they already have high levels of proficiency in at least one language and culture. Ngaanyatjarra children exercise autonomy by freely moving around the streets of the community without parental supervision. From the age of approximately four years, it is culturally acceptable for children to independently explore the community. Ngaanyatjarra Lands School network comprises nine remote Aboriginal communities in the central Western Desert in Western Australia. All communities in the area have the highest remote scaling by the ABS.

Early Childhood Education in Australia

Current policies in early childhood education. The National Quality Framework (NQF; ACECQA, 2012), the National Quality Standard (NQS; ACECQA, 2012), and the Early Years Learning Framework (EYLF; DEEWR, 2009) are the key policies in the provision of early childhood education in the remote area of this study. The Department of Education, Employment and Workplace Relations (DEEWR) has defined early childhood education as "long day care, occasional care, family day care, multi-purpose Aboriginal children's services, preschools and kindergartens, playgroups, crèches, early intervention settings and similar services" for children from birth to age 5 (DEEWR, 2016).

In 2012, the NQF (ACECQA, 2012) was established in Australia for early childhood education centers and after-school services. The aim of the framework is to improve the quality of early childhood education and foster ongoing social, emotional, physical, and cognitive development within early childhood settings across Australia (ACECQA, 2012). The NQS (ACECQA, 2012) is a key component within the NQF (ACECQA, 2012). The NQS outlines seven quality areas to which early childhood education providers should adhere. The aim of the policy is to outline a guideline for early childhood providers to deliver high-quality educational institutions for all children across Australia (ACECQA, 2012).

The EYLF (DEEWR, 2009) aims to address Quality Area 1 of the NQS (ACECQA, 2012). This framework is mandated for all early childhood educators working in learning programs for children from birth to age 5 across Australia. DEEWR (2009) identified three fundamental requirements for a child's development and learning: belonging, being, and becoming, which are reflected in the EYLF.

Aboriginal Education in Australia

Current policies. The National Aboriginal and Torres Strait Islander Education Strategy (Ministerial Council of Education, Early Childhood Development and Youth Affairs [MCEECDYA], 2015) is the primary policy for the context of this study and builds on the previous educational policy, the Aboriginal and Torres Strait Islander Education Plan 2010–2014 (MCEECDYA, 2010). The document details seven priority areas: "leadership, quality teaching and workforce development; culture and identity; partnerships; attendance; transition points including pathways to post-school options; school and child readiness; and literacy and numeracy" (MCEECDYA, 2015, p. 7).

Current practices. Three main practices are identified for educational institutions to provide successful teaching and learning experiences for Aboriginal students (DEEWR, 2016; Harrison, 2005; McKnight, 2016; National Congress for Australia's First Peoples, 2016; Perso & Hayward, 2015). The three practices perceived as central for working with Aboriginal students are (a) building partnerships with families (DEEWR, 2016; McKnight, 2016; National Congress for Australia's First Peoples, 2016; Perso & Hayward, 2015); (b) understanding and accepting cultural traditions and history (McKnight, 2016;

Minutjukur, 2013; Osborne, 2013; Perso & Hayward, 2015), and (c) working systematically (DEEWR, 2016; Perso & Hayward, 2015). Key teaching and learning techniques used in traditional Aboriginal culture include observation, imitation, repetition, connection to real-life purposes, and problem solving (Christie, 1986; Harris, 1984; Minutjukur, 2013; Robinson & Nichol, 1998; Shinkfield & Jennings, 2006; Yunkaporta, 2009). Schools and institutions should seek to incorporate these techniques into their current methodologies (Harrison, 2005; Perso & Hayward, 2015; Robinson & Nichol, 1998; Yunkaporta, 2009). In relation to bridging the gap between home and school life, Perso and Hayward (2015) commented that "teachers need to find out about teaching and learning in the homes and cultures of their students so they can build a 'bridge' for students to make the transition from students' homes to Western schools as smooth as possible" (p. 50).

Montessori Education

Recent literature concerning Aboriginal education supports teaching and learning practices that engage Aboriginal students in classroom environments, such as those exemplified by the Montessori approach. Specifically, literature suggests that schools and institutions should seek to incorporate traditional Aboriginal child-rearing techniques into classroom teaching practices (Harrison, 2005; Robinson & Nichol, 1998; Yunkaporta, 2009). Two traditional child-rearing values include the development of a child's independence and the extension of independence, autonomy. Montessori pedagogy fosters learning and engagement via strategies that support the autonomy of the child.

Montessori National Curriculum. The Australian Curriculum (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014) is a nationwide curriculum for all school-aged children in Australia. However, in November 2011, ACARA officially recognized the Montessori National Curriculum as a substitute national syllabus that was accepted by ACARA's Recognition Register, a charter for well-established, alternative national curriculum frameworks to be assessed and recognized in Australia. ACARA determined that the Montessori National Curriculum aligns with key educational goals and outcomes for Australian children (Montessori Australia Foundation, 2011).

Introduction of Montessori education in Australia. Martha Simpson was a leading figure in early childhood education in New South Wales, Australia, and a lecturer in kindergarten methods at Sydney Teachers' College (Feez, 2013). In 1913, Simpson and three other Australian educators traveled to Rome to attend the first International Montessori Training Course. After returning, Martha Simpson developed a Montessori program at Blackfriars School (Feez, 2013).

History of Montessori education in Indigenous communities in Australia. Montessori education has been applied in several other Indigenous educational contexts, but only limited research on Montessori pedagogy in a remote Indigenous program has been published (Montessori Children's Foundation, n.d.; Rioux & Rioux, n.d.). The first documented collaboration of Montessori pedagogy with Aboriginal students was in 1977 at Weipa State School, now known as Weipa North State School, in the Cape York Peninsula (Feez, 2013). The elders of the Napranum community strongly supported the approach (Feez, 2013). In the 1980s, Montessori teaching and learning practices were adopted with Aboriginal students at Strelley Station, a pastoral station (i.e., a large landholding used for rearing cattle) in the Pilbara region of Western Australia (Feez, 2013). The elders of the Strelley Mob (i.e., a group of Aboriginal people who have a connection to one another) supported the Montessori approach because Aboriginal children were learning English as an additional language without losing their own culture and language (Feez, 2013). In 1986 Murdoch University, then known as the Western Australian Institute of Technology, conducted a study to describe the similarities between learning strategies valued in the community and Montessori teaching and learning practices (Feez, 2013). However, lack of funding forced the project to close.

Current programs of Montessori Education in Indigenous communities in Australia. More recently in Australia, there have been projects involving the Montessori approach with Indigenous children

on Thursday Island, Armidale, Aurukun, and Pormpuraaw (Montessori Children's Foundation, n.d.). Table 1 outlines the current Montessori programs in Indigenous communities in Australia. Tagai College on Thursday Island in the Torres Strait Islands adopted the Montessori approach in 2009 (Montessori Children's Foundation, n.d.). In addition, Strait Start, a program for children ages 0 to 3 years, was created. The Strait Start program was introduced to six other islands in the area, and regular training is held for Torres Strait Islanders employed by the school and program (Montessori Children's Foundation, n.d.). The Strait Start program aims to develop sustainable and culturally responsive methods of teaching and learning in the Torres Strait Islands.

Table 1

Current Programs of Montessori Education in Indigenous Communities in Australia

Location	State
Torres Strait Islands	Queensland
Aurukun	Queensland
Lockhart River	Queensland
Ngaanyatjarra Lands	Western Australia

Features of Montessori education. Within Montessori education are common features of the pedagogy, including independence, autonomy, and observation. Independence is at the core of Montessori pedagogy, as the classroom allows for as much freedom and independence as possible, dependent on students' developmental levels, leaving them free to engage in the chosen activity (Lillard, 2016). Students may independently select activities and their frequency, duration, and location (Feez, 2013; Lillard, 2016). In a Montessori environment, the role of the teacher is to help students work independently, with minimal adult support. Student independence is then embedded in the child's routines from an early age, developing their self-confidence.

Autonomy, an extension of independence, is the central characteristic of Montessori methodology (Johnson, 2016). Autonomy allows children to take charge of their own lives cognitively, socially, and emotionally. Research indicates that human beings have a basic need for autonomy (Ryan & Deci, 2000). Montessori pedagogy encourages children to work and to develop their own intellect with the guidance of their teacher and peers (Johnson, 2016). Independence and autonomy are key characteristics of traditional Aboriginal child-rearing techniques (Gollan & Malin, 2012; Harrison & Selwood, 2016), and the Montessori environment in this study accommodated the students' cultural practices and supported local knowledge systems and language.

Observation is an essential method of monitoring student progress to inform parents, caregivers, and other professionals (Cossentino, 2005; DEEWR, 2009). Fleer and Surman (2006) and Dr. Montessori supported similar approaches to observation within an early childhood educational setting. Through the process of observation, teachers are able to understand children in their natural state, interrupting only when children are working unproductively (Block, 2015; Fleer & Surman, 2006; Lillard, 2016). Montessori teachers are trained to observe children and direct them to the next learning activity (Cossentino, 2005; Lillard, 2016). This practice is consistent with practices promoted by other researchers in which teachers are trained to observe children's activity (Fleer & Surman, 2006).

Within the EYLF observation is a method of inclusive assessment (DEEWR, 2009). Observation is a key component of learning within traditional Aboriginal child-rearing techniques. Observation as a teaching and learning pedagogical practice is present in both Montessori pedagogy (Cossentino, 2005; Lillard, 2016) and traditional Aboriginal child-rearing techniques (Christie, 1986; Harris, 1984). Breadmore (1986)

completed a study in 1986 of Aboriginal children in remote Western Australia and noted the positive correlation between observation in Montessori practices and Aboriginal students (Feez, 2013).

Methods

To investigate this particular group and environment (i.e., an Indigenous community in remote Australia; Bryman, 2008) and to discover the significance of a specific social context in this community (i.e., a Montessori Early Childhood learning environment), a study was designed using qualitative research methods. This research emphasized the approach of *interpretivism*, which aims "to understand individual human action either in terms of their daily interactions and common-sense ideas or in the context of the wider culture" (O'Reilly, 2009, p. 57). Within interpretivism, a phenomenological perspective was used to concentrate on a direct experience within the environment. Fraenkel and Wallen (2003) explained that phenomenologists "generally assume that there is some commonality to the perceptions that human beings have in how they interpret similar experiences, and phenomenologists seek to identify, understand, and describe these commonalities" (p. 437). By adopting a phenomenologist perspective, I sought to describe the common features of the Montessori pedagogy implemented in the remote Aboriginal Early Childhood program (Stringer, 2007). An individual case study was the methodological approach chosen for this research (Berg, 2007; Leedy & Ormrod, 2001; Stake, 1994). Data-collection methods in a case study can include observation, interviews, and audio and video recordings. I selected a case-study approach to understand the effects of a specific phenomenon: Montessori pedagogy in a remote Aboriginal Early Childhood class (Baxter & Jack, 2008). The focus of this case study was to understand the day-to-day experiences of the participants (Leedy & Ormrod, 2001); the intention was to provide a snapshot (Rose, 1991). While the sample size is small, the number of students is representative of early childhood classes in the school network and is typical of other classes in remote Aboriginal communities in the Western Desert of Australia.

Site of Study

The study was undertaken in Papulankutja (Blackstone) RC. The Papulankutja RC, located in the Shire of Ngaanyatjarraku, Western Australia, is one of the most remote communities in Australia. It is a small and isolated community with a population of about 150 people, situated approximately 60 kilometers northwest of the Western Australia, South Australia, and Northern Territory tristate border (Acker & Carty, 2011). According to the Accessibility/Remoteness Index of Australia, Papulankutja RC is very remote because of "very little accessibility of goods, services and opportunities for social interaction" (ABS, 2016, p. 1). Papulankutja RC is a part of the Ngaanyatjarra Lands School network, which is under the jurisdiction of the Department of Education of Western Australia.

Participants

Seventeen students participated in this study. The student participants ranged in age from 3 years to 7 years and comprised 10 female students and seven male students. These participants were representative of early childhood students living in remote Western Australia and in the Ngaanyatjarra Lands School network. The majority of early childhood students in this region are of Aboriginal descent and whose first languages are Western Desert languages, including Ngaanyatjarra, Pintupi, and Pitjantjatjara (Kral, 2012; Ngaanyatjarra Lands School, 2018). Because SAE was often a third or fourth language for these participants, few of them spoke SAE proficiently or at all when they began formal schooling. For example, many had not yet learned the English needed to label classroom objects and actions, nor to communicate in SAE with teachers. For this reason, I spoke the participants' home language, Ngaanyatjarra, in the classroom with the students.

Data Collection

Multiple data-gathering techniques were used, including video recording, journal writing, general observational frameworks, individual observational frameworks, and one-on-one interviews (Berg, 2007). Data were collected from three sources: a critical friend (i.e., a member of the Ngaanyatjarra Lands School network leadership team with over 30 years of teaching experience in remote Aboriginal education and mainstream education), an informant (i.e., a Ngaanyatjarra elder and Aboriginal liaison officer for the Ngaanyatjarra Lands School; Creswell, 2003) and me, the teacher-researcher. The critical friend used the observational framework, which provided a design and development structure for the observation (Stringer, 2007), to record observations of the student participants in the Montessori environment. Data collected by the critical friend, along with responses from the informant collected during three one-on-one interviews, were cross-checked to confirm or deny my observations of the participants' engagement with the Montessori environment (Creswell, 2003). In these ways, I attempted to be transparent and true to the data.

Ethical Considerations

Ethics approval for undertaking the research was sought and obtained from the Human Research Ethics Committee of the University of Notre Dame Australia [UNDA], the Department of Education of Western Australia, and the Ngaanyatjarra Council Aboriginal Cooperation. These approvals required a guarantee that parents and caregivers of the students would be given relevant information to ensure they were fully aware of the research purpose; that student, parent or caregiver, and staff confidentiality would be maintained; and that parental or caregiver consent would be obtained. To obtain informed consent, parents and caregivers of the participants received information sheets (Appendix A) and consent forms (Appendix B), translated into Ngaanyatjarra.

All journal entries, interview transcripts, observational frameworks, and other data collected throughout the study will be stored for 5 years in secure facilities at the UNDA research office. All collected video recordings are for researcher reflection only and not for public viewing. After 5 years, they will be destroyed.

Observational Framework and Video Recording

I video recorded classroom activities three times a week for 1 to 2 hours at various times, to document daily events and gather a diverse range of data. Video recordings permitted me to observe classroom activities at a later time in a nonparticipant manner. These recordings provided comprehensive and detailed observations of essential elements such as places, people, objects, acts, activities, events, purposes, time, and feelings (Stringer, 2007). At the end of each day, I watched the video recording to observe events and activities in the classroom.

Journal Writing

I maintained a journal throughout the study, recording my annotations and impressions of how the participants in the remote Aboriginal Early Childhood class responded to Montessori pedagogy. Keeping a journal helped me consciously record events during the delivery of the Montessori Early Childhood program. In particular, detailed records of day-to-day routines, occurrences, teaching practices, and learning processes were compiled in the journal. After daily classroom contact with the student participants, I watched the video recordings and added to the journal. When writing in the journal, I used *bracketing* to ground my analysis, view events from the participants' perspective, and address the concern of subjectivity. Bracketing is a qualitative research technique used to diminish potential biases that may fault the research procedure (Tufford & Newman, 2010); it enabled me to see the situation more objectively (Stringer, 2007). Journal writing occurred daily.

Ten Observational Frameworks by the Critical Friend

The critical friend was a member of the Ngaanyatjarra Lands School network leadership team who had more than 30 years of teaching experience in remote Aboriginal education and mainstream education. The critical friend, whose first language was SAE, was not Montessori trained and, prior to the study, had had no interaction or affiliation with Montessori pedagogy. The critical friend observed the classroom for 2 hours every 3 weeks of the data-collection period and completed 10 observational records. There were two elements to this form of data collection: a general observational framework (Appendix C) and an individual observational framework (Appendix D). The general observational framework was divided into four Montessori teaching and learning practices: the role of the classroom, the role of Montessori materials, the role of the teacher, and the role of the students. The individual observational framework specified a structure for the critical friend to observe and record a single participant in the Early Childhood program.

Three One-on-One Interviews With the Informant

The informant, a Ngaanyatjarra elder, was interviewed to ascertain her perceptions of the students' attitudes to school life and Montessori pedagogy. An elder is a custodian of local culture and language knowledge systems and has permission to release information regarding Indigenous knowledge and beliefs. The informant was employed by the Ngaanyatjarra Lands School network as the Aboriginal liaison officer. The informant was not Montessori trained and, prior to the study, like the critical friend, had had no interaction or affiliation with Montessori pedagogy. Nevertheless, the informant was familiar with the aims of the Montessori Papulankutja Early Childhood program and, in her role as the Aboriginal liaison officer, had communicated these aims to parents and caregivers of the students. As was the case with the students, SAE was the informant's third or fourth language. The role of the informant was to assist with the interpretation of events in the classroom from a Ngaanyatjarra perspective. The interviews with the informant were unstructured and were conducted in a combination of both Ngaanyatjarra and SAE. Unstructured interviews are based on questions that are prompted by the flow of the interview (Gay, Mills, & Airasian, 2006). Over the data-collection period, the informant completed three 2-hour observations in the Early Childhood class. After each classroom observation, I informally interviewed the informant. Interviews with the informant were video recorded and later transcribed. The purpose of the interviews was to provide an intercultural understanding of student and community life, and the interviews gave the informant an opportunity to use her own words and terminology to detail the learning environment (Stringer, 2007).

Data Analysis

An interpretive analysis of the research findings was used to ascertain the effect of Montessori pedagogy on Aboriginal students in a remote Early Childhood program. A qualitative approach to analysis attempted to establish "how things are happening, rather than merely what is happening" (Stringer, 2007, p. 19). Specifically, I sought meaningful understanding of the participants' experience in their day-to-day life (Neuman, 2013), in this case their experience of Montessori pedagogy in their Early Childhood classroom. The method of analysis for the qualitative data followed a format similar to that outlined by Miles and Huberman (1994), comprising data collection, data reduction, data display, and verification and conclusion drawing. Raw data were gathered and color-coded to highlight common themes or key words. Color-coding the data enabled the researcher to identify patterns, symbols, topics, and shared mind-sets. When displaying the data, I used a chart to organize and classify the themes and key words emerging from the data analysis, using the specific research questions for this study.

Results

The results are presented in chronological order of the data analysis procedure used (based on Miles & Huberman, 1994): concentration and engagement, student autonomy, and student independence.

Concentration and Engagement

The critical friend and I observed that participant students were concentrating and engaged within the classroom environment. During the data-collection period, the critical friend repeatedly commented on the concentration levels of the students observed in this study. Specifically, the critical friend stated, "The class is quiet. Each child is working independently on their own task" (General observational framework, 2013).

Another example of identified concentration and engagement levels emerged during a 3-hour observation. During the 3 hours that the children were working, they had time to engage in a chosen activity and repeat it as many times as desired. I in my journal:

> *The students quickly moved to their chosen work. Some decided to sit on the floor with a mat and others at a table. There was minimal classroom noise and when students were interacting, it was generally done in Ngaanyatjarra. Some students were working alongside others sitting at tables or on the floor to complete their work. One student was wandering around the room trying to decide which work she wanted to complete. The teacher guided the student to a work of interest and developmental appropriateness.* (Journal writing, 2013)

I observed and recorded the learning experience of a 7-year-old student during another 3-hour work cycle:

> *The student collected a mat from the basket and rolled it out on the floor. Independently the student selected a work and began carrying the Pink Tower material one at a time from the Sensorial shelf. The student concentrated on the work for 13 minutes independently. She was ordering the 10 pink wooden cubes increasing progressively through the algebraic series of the third power, 1 cm^3 to 10 cm^3. She completed the work horizontally and vertically before beginning to pack away. She packed away, one cube at a time, ready for the next student. She completed the full learning cycle and moved to find the next work. She selected a Practical Lhuife work and sat at a table.* (Journal writing, 2013)

The 7-year-old student clearly was engaged in the learning activity and displayed a sustained, 13-minute period of concentration while completing the task. Because of Montessori pedagogy and the classroom's structure as a Montessori learning environment, students in this study were able to select work of interest to them.

In another example, the critical friend noted two students engaging in negative classroom behavior. However, during this period of disruption, the critical friend observed another student in the class who remained engaged and concentrated on his work. Although this child occasionally observed the negative behavior, he continued to focus on his work. The critical friend commented:

> *The student independently chose work at a table. Two peers were in a power struggle and were teasing each other. The student was watching intermittently. He was working and often interrupted by other students; however, he returned straight back to his work.* (Individual observational framework, 2013)

From the comment of the critical friend, it is evident that within the Montessori classroom environment, negative distractions arise for students. However, in the classroom observed for this study, distractions were minimized as students chose to continue concentrating on work of interest rather than engage in the disruptive behavior.

During the data-collection period, the informant observed the Montessori environment students "learning without anyone else humbugging [interfering with or interrupting] them" (Interview, 2013). The informant commented on the difference between the concentration and engagement of students in a Montessori early-years classroom and those in a non-Montessori early-years classroom.

> *The difference in Montessori is when* tjitji *[a child] come in [to the classroom] and they [the child] chose what they want to do. They really focus on what they trying to do. The teacher can come, sit down and work with the* tjitji*. There is no other humbugging cause they're [the other students] all doing other work [pointing around the different parts of the room]. They are making their choice because they interested.* (Interview, 2013)

During interviews, the informant regularly commented on the students' interest and sense of control within the learning environment and thought that this sense of control contributed to the engagement and concentration she was seeing.

Student Autonomy

As previously mentioned, traditional child-rearing practices of remote Aboriginal families encourage children to be autonomous (Harrison, 2005; Robinson & Nichol, 1998; Yunkaporta, 2009), and children make autonomous choices from a young age. Therefore, issues may arise for Aboriginal parents and teachers when preparing students for a more formal school environment. In relation to the classroom observed, the critical friend stated, "Students are naturally autonomous and [the Montessori classroom] does not conflict with their autonomy" (General observational framework, 2013); therefore, Montessori education does not clash with the culture of this RC and traditional child-rearing practices. The critical friend further added that this Montessori classroom appeared to be student centered and aligned with Aboriginal students, as he or she was already autonomous (Individual observational framework, 2013). Within the Montessori environment observed in this study, students were able to select their own activity, and activities were presented sequentially.

During the daily 3-hour work cycle, the students were free to select where to work, what material to work with, the length of time to engage with the activity, and the frequency of repetition. For example, students in the Montessori classroom were able to independently select their own activity, where they wanted to work (table/mat and location), and the activity's duration. These practices are congruent with the students' community out-of-school environment, as students carry out the same process and are autonomous from a very early age.

The informant identified student autonomy as a key theme in the Montessori classroom she observed. The informant stated, "They [the students] chose what they want to do" (Interview, 2013) and further explained:

> Yuwa *[yes], it's freedom. It gives them freedom and choice. When the student coming in they saying, "I'm going over there and I'm going over there do this." Without the teacher saying you doing this, you doing this. It's their choice.* (Interview, 2013)

The informant confirmed that Aboriginal students in the Ngaanyatjarra Lands School exercise significant autonomy in their home lives. The Montessori classroom provided autonomy in students' learning environment, consistent with their home life.

Student Independence

Independence is the ability to act without the control of authority. Within the observed Montessori program, students exhibited independence and control over their learning. I observed the following activity:

> *The 5-year-old student was sitting at a single table completing a creative work, painting. She chose the work herself, collected the work on a tray from the shelf, and collected a fresh glass of water. The student was working quietly, not interrupting the other student who sat across from her. The student worked on the activity for six minutes. She completed the full learning cycle by hanging her painting on the drying rack, washing the brush and cup for the water, and placing all the materials*

> *back on the tray. She stood and placed the work on the shelf, ready for the next student.* (Journal writing from video recording, 2013)

Students were able to select the work they wanted to complete throughout the day. Within the Montessori teaching and learning environment, students select the work they will complete. Although there are numerous materials around the classroom, it is the role of the teacher to direct the student to a work of developmental appropriateness and of interest.

In the observations made during the data-collection period, I identified six key terms used to describe the students' movements in the Montessori program: *Student collects*, *Student chooses*, *Student sets up, Student independently…*, *Student selects*, and *Student packs away* (Researcher journal writing, and journal writing from video recordings, 2013). These descriptions highlight students' independence: they chose their own tasks in the teaching and learning environment. Within the Montessori program, students paused a work task and returned when they pleased. Over the work cycle, other students were not allowed to disturb or manipulate the work of another student. I wrote about an example with a 6-year-old student:

> *The student was now ready for the Hundred Board work. In this session, the teacher showed the student the location of the work in the classroom, how to unpack it and set it up for use. The teacher and student began with denominations of ten (10, 20, 30, etc.), then ones, tens, twenties, and so on. After 14 minutes, the student indicates she is getting tired and would like to pause the work. The student collects her laminated name from the wall and places it at her desk. Subsequently, no other students were allowed to touch this work.* (Journal writing from video recording, 2013)

The next day I wrote, "The student has independently selected to return and continue the Hundred Board work, concentrating on the work for 32 minutes" (Journal writing, 2013). The student's independent desire to revisit and complete the work from the previous day allowed her to master the educational outcome of recognition, ordering, and understanding of numbers 1 through 100.

During a general observational framework, the critical friend noted, "Students are used to pleasing themselves; therefore, a Montessori program reduces the conflict between home and school" (General observational framework, 2013), bridging the gap between the students' home and school lives (General observational framework, 2013). During an individual observational framework, the critical friend described a 6-year-old student who was completing a one-on-one writing presentation with me:

> *The teacher and student have begun work on a mat on the floor. They were completing a daily writing activity. The student wanted to work independently after her discussion with the teacher. The student moved to a desk to work independently. She was distracted by another student but returned to her work. The student was again distracted; she drummed her pencil on the desk for a moment but returned to her work.* (Individual observational framework, 2013)

Although the behavior of peers provides numerous opportunities for distraction, the 6-year-old student displayed high levels of concentration while completing the work with me and, later, working independently on the task. An Aboriginal and Islander Education Officer (AIEO) supports Aboriginal and Islander students and implements culturally inclusive education programs in the classroom. In this study, the AIEO and I worked one-on-one with students, providing a platform for finding intrinsically interesting activities with the students and leading to better concentration and engagement when compared with a more traditional education setting. AIEOs provide assistance and support to Aboriginal and Torres Strait Islander students, their parents and guardians, educators, the school, and the community. This practice within the Montessori environment enabled the AIEO and me to guide students independently to activities of interest. For example, I noted that the students were moving freely and independently in the learning environment. I also worked one-on-one with a visiting student who was unfamiliar was the Montessori routine to find an activity of interest to him (Journal writing from video recording, 2013).

The informant spoke Ngaanyatjarra as a first language and interpreted student dialogue in the Montessori environment. From her bilingual and bicultural perspective, she described the theme of independence in relation to students' school and home life. The informant stated in an interview:

> *I started to see kids focusing on what they wanted to do. And I was thinking "Wow, this is good, this is a good way of learning." 'Cause if we have kids with problems like hearing, they can't sit down and then they get up quick. But they are sitting down... [with the teacher] and taking time...one on one...they not getting up and coming and going. [Then other kids start] thinking "Hey! She's not walking out, she's just doing it" and then they thinking "Hey! I'll just sit down do something like that"* Yuwa *[yes], and it works for the* tjitji *[child], 'cause all the little kids, they want to do something by themselves,* yuwa*. So it's a really good way of teaching, with Montessori.* (Interview, 2013)

The informant described the Montessori environment as "kids focusing on what they wanted to do because [they are] interested in the work" (Interview, 2013). Within the Montessori classroom observed in the study, students focused independently on work. Students were able to choose the materials and location of their work and independently decided how many times to repeat the material.

Discussion

Current early childhood policies and current Aboriginal education literature indicate that students respond to teaching and learning when participation, engagement, connection, resilience, confidence, and independence are present in the classroom setting (ACECQA, 2012; Barblett, 2010; Brewer, 2008; DEEWR, 2009; McLachlan et al., 2010). Specifically discussing Aboriginal education, Price (2012) commented, "Teachers could ensure that Aboriginal and Torres Strait Islander students move towards a student-centric, teacher-guided learning environment in which the student takes primary responsibility for their own learning and educational outcomes" (p. 123). These attributes are at the heart of the Montessori pedagogy and were evident in much of the data collected in this study.

The findings of this research indicate that students in a Montessori classroom are able to autonomously and independently choose activities that interest them. This practice, which is congruent with students' home experiences, enabled the students in this study to better concentrate and engage in learning experiences. The remote Aboriginal Early Childhood students in this study demonstrated high levels of concentration and engagement, as the learning experiences were of personal interest.

These results show that remote Aboriginal Early Childhood students responded to Montessori pedagogy in three ways: concentration and engagement, autonomy, and independence. Evidence suggests a connection among traditional Aboriginal child-rearing techniques, Aboriginal ways of learning, and Montessori pedagogy.

Limitations

Sample size of 17 students. The small sample size may limit the generalizability of the study to a wider Australian population. However, it does not diminish the value of the research for education institutions such as the Ngaanyatjarra Lands School network and other remote Aboriginal contexts. The sample size was representative of the majority of the general, remote, Aboriginal early childhood program population in the Ngaanyatjarra Lands School network. Furthermore, a pilot of the study was conducted in the Ngaanyatjarra Lands School network's Kiwirrkura Campus Early Childhood Montessori program in 2011 and 2012 (Montessori Children's Foundation, n.d.). The Kiwirrkura Campus pilot provided a basis for the research. I acknowledge that Aboriginal education is a complex issue that cannot be resolved by the provision of one alternative teaching methodology. This research provides a description of how the students responded to Montessori pedagogy.

Future Directions

Longitudinal study. A longitudinal study could be undertaken to observe the Papulankutja Campus Early Childhood students over an extended period of time, perhaps 1 to 5 years. The study could take place at the beginning and end of each school year. A longitudinal study would allow for fine-tuning of the current study and for possible greater generalization of Montessori pedagogy within a remote Aboriginal Early Childhood program.

Several simultaneous studies across a variety of contexts. The current study focused on the Ngaanyatjarra Lands School network's Papulankutja Campus Early Childhood students. The study could be expanded to include Kiwirrkura Campus Early Childhood students, which piloted Montessori pedagogy in 2012. Research could be extended to other Montessori programs in Indigenous contexts in Australia and internationally. Future research could lead to a greater capacity for cross-context comparison.

Practicing educators (Indigenous and non-Indigenous). This study has implications in both Indigenous and non-Indigenous contexts. Practicing educators must be aware of culturally responsive methods of teaching and learning. It is the role of the practitioner to find and implement a teaching pedagogy that best suits the students and their wider community.

Conclusion

This research indicates the potential of Montessori pedagogy as a viable alternative practice of education for remote, Aboriginal early childhood students. Within the program observed in this study, the Early Childhood students responded positively as they selected activities of personal interest and the location in which to complete the work. Students were therefore more likely to engage in the experiences with enthusiasm and interest, as they had choice in and control over their learning. Remote Aboriginal early childhood students exercise high levels of autonomy within traditional Aboriginal child-rearing techniques, and Montessori pedagogy is congruent with these behaviors. As a consequence of the results and discussion, I offer three recommendations for consideration.

First, tertiary institutions and system authorities should alert preservice teachers and new teachers in remote locations to alternative methods of education, including Montessori pedagogy. Second, education training providers should include Montessori and non-Montessori training in remote locations. Training providers may reconsider the way training and professional development is delivered to teachers, AIEOs, and the wider Indigenous communities to make it more accessible. Third, government agencies designing curriculum for Indigenous students should take note of this study, as Montessori pedagogy may align traditional Indigenous child-rearing techniques with current early childhood–education policies and practices.

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Appendix A
Participant Information Sheet

THE UNIVERSITY OF NOTRE DAME AUSTRALIA

PARTICIPANT INFORMATION SHEET

PROJECT TITLE: The Introduction of Montessori Teaching and Learning Practices in an Early Childhood Classroom in a Remote Indigenous School.

CHIEF INVESTIGATORS: Associate Professor Shane Lavery and Mrs Glenda Cain
STUDENT RESEARCHER: Miss Catherine Reed
STUDENT'S DEGREE: Master of Education by Research

Yuwa, walgummanu.

Miss C would like to ask you if she can to some research on the little tjitji class.

What is the project about?

The little tjitji class have been using a different way of teaching called Montessori. Maria Montessori started it over 100 years ago in Italy. She wanted to teach kids how to look after themselves and learn how to read, write and count.

Italy 1923

Papulankutja 2013

Participant Information Sheet template June 2013

PARTICIPANT INFORMATION SHEET

Who is undertaking the project?
Miss C, the little class teacher.

What will I be asked to do?.

- The tjitji (kids) will be doing their normal school 'jobs' but Miss C will be videoing them.
- After school she will write down what they are doing.




How much time will the project take?
June to December 2013.

Are there any risks associated with participating in this project?
We are only doing our normal 'jobs' and nothing different.

What are the benefits of the research project?
All people can learn what the little tjitji class is like and some other schools could use the Montessori 'jobs'.

Participant Information Sheet template March 2013

PARTICIPANT INFORMATION SHEET

Can I withdraw from the research?

Yuwa. Come and talk with Miss C or Miss Daisy anytime at school or at the green house.

What if I don't want my tjitji in the research?

If you do not want your tjitji in the research that is ok. Miss C will made sure she does not do any writing, take any pictures or any videos of your tjitji, if she accidentally does she will delete it quickly and not show anyone.

Will anyone else know the results of the project?

All videos and notes will be kept secret.

Will I be able to find out the results of the project?

Miss Daisy and Miss C will come and talk to you at the end about what we found out.

Who do I contact if I have questions about the project?

Come and see Miss C at the school, at her house (green house) or at the shop after school.

What if I have a complaint or any concerns?

The study has been approved by the Human Research Ethics Committee at The University of Notre Dame Australia (approval number ########). If participants have any complaint regarding the manner in which a research project is conducted, it should be directed to the Executive Officer of the

Participant Information Sheet template March 2013

PARTICIPANT INFORMATION SHEET

Human Research Ethics Committee, Research Office, The University of Notre Dame Australia, PO Box 1225 Fremantle WA 6959, phone (08) 9433 0943, research@nd.edu.au

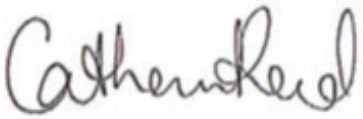
Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

I want to participate! How do I sign up?

Please sign the form and give it to Miss C or Miss Daisy.

Palya,

Miss C



Catherine Reed

If participants have any complaint regarding the manner in which a research project is conducted, it should be directed to the Executive Officer of the Human Research Ethics Committee, Research Office, The University of Notre Dame Australia, PO Box 1225 Fremantle WA 6959, phone (08) 9433 0943, research@nd.edu.au

Appendix B
Participant Consent Form

THE UNIVERSITY OF NOTRE DAME AUSTRALIA

CONSENT FORM

A description of Montessori Teaching and Learning Practices in a remote Aboriginal early childhood classroom: A qualitative case study in Western Australia.

INFORMED CONSENT FORM

Yuwa, walgummanu.

Miss C would like you to sign your name if it is ok if she includes your tjitji in her research. If it is ok, please write your tjitji's name just here and your name at the bottom.

I, *(tjitji's name)*

_____  hereby agree to being a participant in the above research project.

- I have looked and read the Information Sheet about this project and please asked all my questions to Miss C or Miss Daisy.
- I know I can pull out anytime.
- I understand that all the writing, pictures and videos Miss C will collect that she will keep them safe and not show anyone else.
- I understand that the protocol adopted by the University Of Notre Dame Australia Human Research Ethics Committee for the protection of privacy will be

Consent Form Template Version 2012.2

adhered to and relevant sections of the *Privacy Act* are available at http://www.nhmrc.gov.au/

- I agree that any research data gathered for the study may be published provided my name or other identifying information is not disclosed.
- I understand that I and my tjitji will be audio- / video-taped.

Please write your yini here

PARTICIPANT'S SIGNATURE:		DATE:	

RESEARCHER'S FULL NAME:	Miss Catherine Reed		
RESEARCHER'S SIGNATURE:		DATE:	

If participants have any complaint regarding the manner in which a research project is conducted, it should be directed to the Executive Officer of the Human Research Ethics Committee, Research Office, The University of Notre Dame Australia, PO Box 1225 Fremantle WA 6959, phone (08) 9433 0943, research@nd.edu.au

Appendix C
Critical Friend: General Observational Framework, Part A (Sample)

Please comment on the following areas.

Montessori Teaching and Learning Practices Key Indicators	**What are the differences from Montessori to Mainstream teaching?**
Role of the Classroom Things to consider… - mini-community/homelike - learning how to be a part of a family - quiet and calm workplace - classroom has beauty and order, light-filled room without clutter to avoid overstimulation - materials being at student's eye level - not having their own table but shared spaces - everything in the classroom having its own place	
Role of the Montessori Materials Things to consider… - link to real life - purposeful and meaningful - didactic - child size - developmentally appropriate curriculum - inbuilt control and error - made of natural materials where possible - same all over the world - each material has a purpose, set task, or out-come - use of senses - length of time a child stays with the materials - opportunity for repetition - inbuilt social skills - 100 years of refinement	

Montessori Teaching and Learning Practices Key Indicators	What are the differences from Montessori to Mainstream teaching?
Role of a Teacher Things to consider… - student centred - one-on-one learning - teacher's role as a director/directress - teacher conducts presentations - sharing learning environment with family - linking learning environment to culture	
Role of the Student Things to consider… - independence - confidence - valued member of the classroom community - selecting and packing away a 'job' - the kind of work they are selecting - concentration - student collaboration - social interaction - cleaning up after themselves	
Name of Observer	**Date of Observation**

Critical Friend: General Observational Framework, Part B (Sample)

Please comment on the following areas.

Montessori Teaching and Learning Practices Key Indicators	How do you think Montessori can support remote aboriginal education?
Role of the Classroom Things to consider… - mini-community/homelike - learning how to be a part of a family - quiet and calm workplace - classroom has beauty and order, light-filled room without clutter to avoid overstimulation - materials being at students' eye level - not having their own table but shared spaces - everything in the classroom having its own place	
Role of the Montessori Materials Things to consider… - link to real life - purposeful and meaningful - didactic - child size - developmentally appropriate curriculum - inbuilt control and error - made of natural materials where possible - same all over the world - each material has a purpose, set task, or outcome - use of senses - length of time a child stays with the materials - opportunity for repetition - inbuilt social skills - 100 years of refinement	

Montessori Teaching and Learning Practices Key Indicators	How do you think Montessori can support remote aboriginal education?
Role of a Teacher Things to consider… - student centred - one-on-one learning - teacher's role as a director/directress - teacher conducts presentations - sharing learning environment with family - linking learning environment to culture	
Role of the Student Things to consider… - independence - confidence - valued member of the classroom community - selecting and packing away a 'job' - the kind of work they are selecting - concentration - student collaboration - social interaction - cleaning up after themselves	
Name of Observer	**Date of Observation**

Appendix D
Critical Friend: Individual Observational Framework, Part A (Sample)

Student Name	**DOB**	**Year Level**
Briefly describe what work the student is completing.		

Circle which description best applies to the student.

Work Type What type of work is the student completing?	• Presentation • Working independently • Working with another child • Working with a group
Presentation Type What presentation type is the student completing?	• First presentation • Representation • Point of interest/consciousness • Child presented
Start How How did this work begin?	• Independent choice • Suggested choice • Directed choice • Child influence
Engagement How would you describe the student's engagement in the work?	• Deep concentration • Concentration • Working but distracted • Quiescent • Slight disorder • Disorder • Uncontrollable
Finish How How did the student finish their work?	• Put away independently • Put away with help from adult • Put away with help from another child • Didn't put away
Name of Observer	**Date of Observation**

Critical Friend: Individual Observational Framework, Part B (Sample)

Circle what behaviours the student and teacher are exhibiting in the classroom

Behaviour	**Student Exemplar**	**Teacher Exemplar**
Independence	Student selects work.	Teacher shapes the choice to promote some educational outcome.
Purposefulness	Student can explain why he/she has chosen the work.	Teacher can explain how the activity consolidates an understanding, deepens an understanding, etc.
Orderliness	Student elects to work in a way that will facilitate the completion of the task.	Teacher promotes an orderly, purposeful classroom by reducing distractions.
Persistence	Student returns to an unfinished task after a break.	Teacher retains a map of what each child is doing.
Altruism	Student demonstrates prosocial behaviour.	Teacher intervenes where a student has behaved antisocially.

Briefly describe what is occurring in the classroom.

Name of Observer **Date of Observation**