



Montessori Education in the Ngaanyatjarra Lands

Catherine Holmes

Australian National University

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 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 cultural 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 into 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 who

work with them. The motivation for this research stems from the researcher's personal interest and involvement in remote Aboriginal education. The researcher first became interested in remote Aboriginal education when she 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 being used 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 have opportunities for social interaction. Within Australia, more than 250 Indigenous languages are spoken (ABS, 2016). 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 where Standard Australian English [SAE] and Western knowledge and ways of knowing are valued. 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, Fler, & 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, 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; Yunkaporta, 2009; Minutjukur, 2013; Robinson & Nichol, 1998; Shinkfield & Jennings, 2006). Schools and institutions should seek to incorporate these techniques into their current methodologies (Harrison, 2005; Yunkaporta, 2009; Perso & Hayward, 2015; Robinson & Nichol, 1998). 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; Yunkaporta, 2009; Robinson & Nichol, 1998). 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 in 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 Thurs-

day 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). Fler 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; Fler & 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 (Fler & 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). 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 and be destroyed.

Observational Framework and Video Recording

I video recorded classroom activities three times a week for between 1 and 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. Writing 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: general observational framework (Appendix C) and 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 student's 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; Yunkaporta, 2009; Robinson & Nichol, 1998), 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 implement 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 with 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 they would like 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 potentially limits 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 cur-

rent 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



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

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

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 make 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

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



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

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:	
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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.

<p>Montessori Teaching and Learning Practices Key Indicators</p>	<p>What are the differences from Montessori to Mainstream teaching?</p>
<p><i>Role of the Classroom</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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 	
<p><i>Role of the Montessori Materials</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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	What are the differences from Montessori to Mainstream teaching?
<p><i>Role of a Teacher</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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 	
<p><i>Role of the Student</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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 	
<p>Name of Observer</p>	<p>Date of Observation</p>

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 re- mote aboriginal education?
<p><i>Role of the Classroom</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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 	
<p><i>Role of the Montessori Materials</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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 re- mote aboriginal education?
<p><i>Role of a Teacher</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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 	
<p><i>Role of the Student</i></p> <p>Things to consider...</p> <ul style="list-style-type: none"> - 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 	
<p>Name of Observer</p>	<p>Date of Observation</p>

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

Student Name	DOB	Year Level
<p>Briefly describe what work the student is completing.</p>		
<p>Circle which description best applies to the student.</p>		
<p><i>Work Type</i> What type of work is the student completing?</p>	<ul style="list-style-type: none"> • Presentation • Working independently • Working with another child • Working with a group 	
<p><i>Presentation Type</i> What presentation type is the student completing?</p>	<ul style="list-style-type: none"> • First presentation • Representation • Point of interest/consciousness • Child presented 	
<p><i>Start How</i> How did this work begin?</p>	<ul style="list-style-type: none"> • Independent choice • Suggested choice • Directed choice • Child influence 	
<p><i>Engagement</i> How would you describe the student's engagement in the work?</p>	<ul style="list-style-type: none"> • Deep concentration • Concentration • Working but distracted • Quiescent • Slight disorder • Disorder • Uncontrollable 	
<p><i>Finish How</i> How did the student finish their work?</p>	<ul style="list-style-type: none"> • Put away independently • Put away with help from adult • Put away with help from another child • Didn't put away 	
<p>Name of Observer Date of Observation</p>		

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
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