Introduction

Figure 1. The context of this study

This study investigates the interactions of Kunibídji children with texts developed in their minority Indigenous Australian language. The texts were accessed through a computer that was located around the homes where the minority Indigenous Australian language, Ndjébbana, was spoken in everyday communication. The language of interest in this study is Ndjébbana and it is spoken by only 150 Kunibídji who live in Maningrida, a remote community in Arnhem Land in the Northern Territory. The study context is represented in Figure 1. While Figure 1 represents the participants, setting and technological artefacts in the study, it does not convey the activity that was generated around the computer as it displayed Ndjébbana printed texts to the Kunibídji. Figure 1 does not convey the complex social practices that were encountered in making the Ndjébbana texts available on a computer. The investigation of the interactions around the Ndjébbana texts displayed on computer illuminated the complex social practices that are not completely visible in Figure 1.

Language Loss

This study is important for several reasons. Firstly, the number of languages in the world is decreasing. Lo Bianco (2000) suggests that 90 per cent of the world's presently spoken languages are on the verge of extinction. The number of Indigenous Australian languages is decreasing (Lo Bianco 1987; Kraus 1992). Walsh (1993) suggests that, of the 250 Indigenous Australian languages that were spoken before European contact, 160 are extinct, seventy are under threat and only twenty are likely to survive. Dixon (2002) suggests that in Australia, Indigenous Australian children are currently learning less than twenty Indigenous Australian languages. However, 'if a minority group is to maintain its ethnic identity and social cohesion it must retain its language' (Dixon 1980, p.79).

Kunibídji children are currently learning to speak Ndjébbana from their parents as their preferred language of communication. The children's opportunity to learn Ndjébbana from their parents maintains a social cohesion amongst members of the Kunibídji community that has implications for their self-determination. Fishman (1971, p.341) has suggested that 'language maintenance is a function of intactness of group membership or group loyalty'. Indigenous Australians who speak minority languages should have access to projects that support the language maintenance through meaningful memberships to groups. Projects that support the use of Indigenous Australian languages by their speakers give those speakers more language choices in the future. If self-determination is based on making choices then speakers of minority Indigenous Australian languages should have access to projects that support their choice to continue to speak their minority languages in a meaningful and purposeful way. This study examines the choices made by the Kunibídji when Ndjébbana

texts are distributed around their homes on a computer. The choices the Kunibídji make about the Ndjébbana texts in this study could be used to inform the future literacy materials produced in Ndjébbana.

Justifying the study

This study is also important as it investigates the Kunibídji children's responses to electronic literacies in their first language. Electronic literacies are becoming part of new powerful global discourses (New London Group 1996; Warschauer 1999). Kunibídji have a right to access these new literacies in their first language. Opportunities to tinker with electronic literacies that display Ndjébbana texts in a home environment will equip the Kunibídji children with a better understanding about the sociotechnical practices associated with reading. Where these electronic literacies are acquired initially at home, the learning at school builds on the knowledge the children have already internalised.

Another important aspect of this study is the search for new mediums that make Indigenous languages more accessible for their speakers. Laughren (2000, p.1) suggests that, as the number of Indigenous Australian languages has decreased, those that remain have been represented in a variety of media. This study gauges the Kunibídji response to a new way of representing Ndjébbana. When Ndjébbana texts are represented in a digital form there is the capacity to present oral and printed forms of the same text simultaneously. Rose (1996, p.xx) has shown that 'radio and television production are closer to the oral nature of traditional Aboriginal communication than printed-word newspapers, magazines or books'. The common feature of television and radio is the channel of sound. This study is important as it

attempts to integrate the channel of sound into printed Ndjébbana texts to make the texts more accessible to the Kunibídji who currently have trouble reading print based communication.

This study is valuable because it challenges the currently accepted approach to the use of computers in education in many remote Indigenous Australian contexts. The latest technological development associated with computers tends to be transferred to Indigenous Australian contexts without any critique of the technology or consideration of the needs of the specific context. When developing Computer Assisted Language Learning projects, Levy (1997a, p.xi) challenges us to make use of all that 'has gone before, rather than be led purely by the capabilities of the latest technical innovation'. This study will explore a possible use of technology and texts by members of the Kunibídji community. In this study the members of the Kunibídji community are not constructed as passive consumers of technological developments that have been designed for non-Kunibídji computing contexts. Where Levy's challenge is taken up in a minority Indigenous Australian context, Indigenous people may construct their own ideological spaces in which value is given to local Indigenous literacies. This study will examine the kinds of ideological spaces constructed by the Kunibídji children as they negotiate Ndjébbana texts presented on a computer around their homes.

The social possibilities of the DVD media provide the final important aspect of this thesis. By presenting this thesis on a DVD, the interactive Ndjébbana texts (the tools of this study) and digital video of the interaction of the Kunibídji around the computer (the raw data of the study) can be integrated into the final text of the report. The thesis can include a report about

the study that is presented in Ndjébbana for the Kunibídji to read. The Ndjébbana report will explain the findings of the study in a Ndjébbana oral narrative which integrates the same videos and interactive texts used in the English language academic report. By presenting the Ndjébbana report as part of the thesis on DVD, the participants have greater access to the results of the study. The technology associated with DVD presentation makes possible a visual and oral report about the study in Ndjébbana. The social possibilities of showing respect for members of the Kunibídji in the medium of the thesis is made possible with DVD technology.

By presenting the thesis on a DVD, there is a capacity to present a hybridity of voice that has not yet been achieved in any thesis I have seen. The academic argument expressed as English text will be consistent with the voice expressed by the Kunibídji in their interactions with the Ndjébbana texts. The voices of the Kunibídji that were captured on digital video around the computer used in the study will be interwoven with the English texts. The arguments presented in this thesis are based upon the Kunibídji voices that have been expressed in the study. The computer in this study was initially used to extend the Kunibídji children's acquisition of Ndjébbana texts in an informal environment. When the thesis is presented on a DVD, the digital video captured in the study and its critical analysis is used to extend the non-Kunibídji understandings of Kunibídji social practices.

The Kunibídji Context

The Kunibídji's historical, social and linguistic context is a major factor in assessing the relevance of the theories which underpin this study. This is particularly so when the critical

approach taken in this study repeatedly calls for bottom up approaches to be implemented. By initially outlining the Kunibídji context, the theoretical framework that has been constructed for this study can be seen to have more relevance.

A general theme that runs through this section is the Kunibídji's unique historical and social context which must be understood against the backdrop of diversity among other Indigenous Australian nations. Partington (1998, p.2) conceptualises this diversity with reference to the variety of links of Indigenous peoples to the land, language, occupation, class and gender. The unique historical and social context of the Kunibídji needs to be explicitly outlined in order to challenge any preconceived stereotypes about this group of Indigenous Australians. While there is certainly diversity amongst the Kunibídji, a general understanding of their combined historical, social and linguistic context will be presented as background information in this study.

Geographical

Maningrida, the site at which this research is conducted, is a remote Indigenous Australian community that is located in Arnhem Land, an Indigenous Australian reserve in the Northern Territory. The community is located on the mouth of the Liverpool River and is approximately 500 kilometres by road to Darwin. The community is serviced by daily flights and weekly barges that provide an important link to Darwin when the four wheel drive road is closed from December to April each year due to the wet season.

Historical

Before contact with non-Indigenous people, the Kunibídji lived around what is now Maningrida. The Ndjébbana word for non-Indigenous people is 'Balanda' which means 'white man'. The history of this contact in Maningrida has been divided into 'three broad phases that correspond closely to the government's policy of protection and preservation, assimilation and integration, and self determination and self management' (Altman 1987 p. 2).

The protection and preservation stage dates from the Kunibídji contact with Macassan fishermen from Sulawesi early in the 20th century, to the establishment of a trading post in 1957 (Altman 1987). Unlike many other communities along the coast of the Northern Territory, the Kunibídji's contact with the variety of people who were alien to their tradition throughout this phase was neither extensive nor permanent. There were missions established only 100 kilometres away from Maningrida, however the Kunibídji were 'not wholly at home' (Armstrong 1967, p. 4) with them and rarely visited.

The subsistence economy in Maningrida declined throughout the assimilation and integration stage between 1957 and 1973 and as a consequence the Kunibídji became 'dependent upon welfare and handouts for survival' (Altman 1987 p.4). When the present day community of Maningrida officially opened in 1962, there was a hospital, school, store, administrative buildings as well as housing for white staff (Altman 1987). 'By 1966 the 118 Kunibídji shared their land with 554 other Indigenous Australians made up of Rembarranga, Burarra, Nakarra, Kunwinjku, Gumawuwurk and Gorrgone speakers' (Armstrong 1967, p.5).

Rowley (1971) suggested that the assimilation policies in Australia could not have been more inefficient due to the isolated locations of reserves and missions as well as the limited contact between Indigenous and non-Indigenous people. Such was the case in Maningrida. The Kunibídji lived in extremely poor conditions and worked in low-paying jobs whilst the Balanda (white people) lived in a separate housing estate and completely controlled Maningrida (Altman 1987). Only a handful of Kunibídji had access to education during this stage of Maningrida's development. The purpose of developing Maningrida was to promote 'the assimilation program of the Northern Territory' (Egan 1959, p.24)

A change of Federal government in 1973 began a new phase of self determination and self management that is still continuing today. The result of this change in Maningrida has been the gradual return of local political power to the Indigenous Australians. During this phase, all Indigenous Australians have had a right to education. In Maningrida, the Indigenous residents had the choice to return to their specific homelands in this phase of Maningrida's history (Gillespie, Peter and Bond 1977).

These homelands are settled by groups that typically comprise several families. Due to their remoteness, the homelands around Maningrida have limited facilities and infrastructure, compared to Maningrida. In 2004, there were approximately twenty-five outlying homelands serviced by Maningrida. To maintain contact with their country and to supplement their food supply, most Indigenous Australian residents of Maningrida travel between Maningrida and their homelands. During the dry season, many Kunibídji have seasonal camps around the seas

and rivers near Maningrida. Generally speaking, the Kunibídji have strong ties with the land and seas through ceremony, kinship relations and food available from the land.

Linguistic

In 2004, the 150 Kunibídji shared Maningrida with approximately 1600 other Indigenous Australians and 100 non-Indigenous Australians. Maningrida was developed as a trading post rather than a mission, therefore, the linguistic diversity in Maningrida is unique. The languages that are spoken in Maningrida include Burarra, Gun-nartpa, eastern Kunwinjku, Rembarranga, Nakarra, Gorrgone, Kunbarlang, Dalabon, Djinang, Wurlaki. English is often spoken as a third or fourth language. In per capita terms, Maningrida may be the most multilingual community in the world (Carew 2002).

Due to the diversity of languages in Maningrida, Ndjébbana can be constructed as a minority Indigenous Australian language, threatened not only by English but also the more dominant Indigenous Australian languages that are spoken in Maningrida. Unlike other homelands around Maningrida, the Kunibídji's homeland of Maningrida provides no escape from the threat to their Ndjébbana language. This threat to Ndjébbana is a daily reality to the Kunibídji living in Maningrida and is associated with the beginnings of a language shift from Ndjébbana to Kunwinjku and English.

Added to this threat of language shift by the Kunibídji is the complexity of Ndjébbana. McKay (2000) has classified Ndjébbana as a non-Pama-Nyungen language as it makes use of prefixes and suffixes for derivation in inflection. Ndjébbana verb morphology is 'rather

complex' (McKay 2000, p. 156) and when children begin writing and reading Ndjébbana they soon encounter a complex representation of words. For example, 'Barraródjibanja nalakórrbbiba barrayirríyanja' translates to English as 'A boy and a girl walking along the road'. There is a need to link oral and printed forms of Ndjébbana to make reading of the texts more accessible.

Ndjébbana is a complex minority Indigenous Australian language that is used by the Kunibídji as their preferred language of everyday communication amongst themselves. The tools and data used in this study are in Ndjébbana, demonstrating that this study respects the Kunibídji's language preferences.

Pedagogical Context

Kunibídji access to school has been a recent experience. Although education had been regarded as a right for every Australian during the assimilation period, school for the Kunibídji children only began in 1978 under a shelter near some Kunibídji homes. Prior to this only a few Kunibídji were 'sent' to school at Maningrida to learn how to read and write.

Attendance of the Kunibídji children at school has always been spasmodic. School competes with a variety of community activities such as family trips to find food, funerals and ceremonies. Kunibídji children's passive avoidance of teasing by other Kunibídji children in the class also adds to their low levels of attendance at school. Kunibídji children from different family groups tend to play in family groups outside school. When they attend

school, teasing often takes place between groups of children. Some children tend to stay at home rather than risk being teased at school.

The children generally leave school around the age of 15 with low levels of literacy. The Kunibídji are currently negotiating not only the benefits of literacy but also the risks and returns associated with going to school. While there are low levels of literacy amongst the Kunibídji adults, the effects of this are offset by the informal community networks that have been developed to deal with problems of literacy. A feature of these networks is the role of Balandas as mediators to interpret the texts where the Kunibídji community's understandings of literacy are not sufficient.

One initiative that was intended to make the school more meaningful was the provision of bilingual education for Indigenous Australian students whose first language was not English. Bilingual education in Northern Territory schools began a few years after a change of government in Australia in 1973. The belief that schooling in the children's first language would benefit their academic achievement was the motivating factor for implementing and maintaining bilingual education in the Northern Territory (Laughren 2000). The school at Maningrida has two bilingual programs, one in Ndjébbana and the other in Burarra.

The Ndjébbana Two-Way Program officially commenced in 1973 (Laughren 2000) when the orthography of Ndjébbana was developed. The Kunibídji have only had access to printed Ndjébbana texts for a short time relative to the history of print. The recent exposure to print

is a feature of the pedagogical context of the Kunibídji who are proud of their Ndjébbana books.

All the texts for the two bilingual programs are made at the school's Literature Production Centre. To facilitate this process, there is a literature production supervisor who looks after the technical aspects of print production. These books, which are created by the students and community members, are usually based on events and excursions around Maningrida as well as documenting the links of the Kunibídji with the land. There are currently two Balanda teacher linguists and two Indigenous Australian literacy workers who coordinate the creation of these texts, as part of their job to run the bilingual programs.

A key feature of this text production process in the Ndjébbana Two-Way Program is the checking of the texts. The consensus sought by the Kunibídji adults about the content and grammar of the Ndjébbana texts reflects their limited history of print and tends to slow the text production process. While there is no Ndjébbana dictionary, the staff at the school and Kunibídji community members rely on word lists that have been generated from previously produced Ndjébbana texts.

While text production is slow, books are in short supply in the community for a myriad of reasons. Ndjébbana texts tend to be kept at the school, which is another factor that has limited the integration of print into Kunibídji social practice. However the avid consumption of Ndjébbana texts by the Kunibídji, particularly texts that have pictures of themselves or

family members, suggests that short supply is not due to the Kunibídji's lack of engagement with these texts.

The Ndjébbana Two-Way Program is not a quick fix to the complex problems of the Kunibídji's pedagogical context. Partington (1998, p.2) suggests that 'no simple solution exists' to fix the complex failures of the school in Indigenous Australian contexts. The Ndjébbana Two-Way Program does give currency to the informal apprenticeships that take place in the Kunibídji community, and it pressures the school to incorporate the pedagogical understandings of these apprenticeships into the program. Part of the complex failure of the school resides in its lack of understandings about these apprenticeships that take place in the Kunibídji community.

While this study uses the books created for the Ndjébbana Two-Way Program, it focuses on the Kunibídji's engagement with Ndjébbana texts outside the school context. While the results can be used to inform the Ndjébbana Two-Way Program at the school, the results also have implications for the way that the school negotiates Kunibídji pedagogy.

My history with the participants

I have included this history to highlight the transformation in my own teaching and the children's attitude to school which took place as we negotiated working with each other. There is nothing unique about this transformation. Most Balanda teachers who remain for any length of time go through the same process when they begin to teach in a Two-Way school. Previous teachers of the Kunibídji have generally left behind useful resources and

positive relations between Balanda and Kunibídji, since the school began in 1978. What made the transformation easier for me was the patience of the Kunibídji to explain their ways of knowing to yet another Balanda teacher.

Before I arrived in Maningrida I was teaching high school maths in a small country town. I arrived in Maningrida in 1992 to teach the upper primary Kunibídji children who were aged between eight and twelve years old. All the Kunibídji children spoke Ndjébbana amongst themselves in the classroom. Any instructions I gave in English were translated by an Indigenous Australian Education Worker into Ndjébbana for the children to understand. Although I had been teaching high school maths and science for a number of years, nothing had prepared me for the challenges I faced when teaching Kunibídji students.

Some immediate ideas about what to teach emerged from my reading about two-way education. Harris (1990, p.14) suggests a 'two-way school should provide for the skills and knowledge from both cultures to be learned; all involving a source of knowledge, a style of doing things, and learning contexts which authentically match each body of learning'. Embedded in the two-way program was an equal respect for Indigenous and Balanda ways of knowing. I began learning about Ndjébbana language and Kunibídji ways of knowing while teaching about the Balanda lifeworld.

The class and some interested parents went on an excursion once a week. We visited places of Kunibídji significance where the Kunibídji ways of knowing underpinning the Ndjébbana Two-Way Program were consolidated. About once a month we camped overnight around

these traditional Kunibídji sites. During these excursions I was able to begin to see the links between the Kunibídji ways of knowing and Kunibídji ways of being. I reciprocated by explicitly outlining my Balanda ways of knowing and being. The time spent away from the classroom tended to make these links between knowing and being more concrete in both the Balanda and Kunibídji lifeworlds of the children. As we both made sense of each other's lifeworlds the learning that took place was marked by 'critically reasoning to try and understand aspects of the world more deeply' (Lankshear 2003, p.59). The logical consequence was to complement the excursions with opportunities for the children to extend their understandings of Balanda lifeworlds. As a class we embarked on a project to go to Darwin. The children began selling frozen cups of cordial in the community after school and on the weekends at football matches. Various changes in the classroom took place in response to the children's efforts in selling the ice cups. We made a graph of how many ice cups each child sold. The Kunibídji children were learning about 'being' a Balanda even before the planned excursion by controlling a scarce commodity in Maningrida, even if it was only ice cups!

Around the same time we began an unrelated study about Ndjébbana Loan Words which were borrowed from the Macassan fishermen. These fishermen 'left a legacy, not only of potsherds and tamarind trees, of canoes and other tools, but also words' (MacKay 1978, p.10) around Maningrida and nearby country. The children and parents became interested in identifying these loan words, particularly when a group of Maningrida Community representatives returned from a visit to Sulawesi.

When the graph of some children's efforts reached the ceiling, the parents began to monitor their efforts. As their graphs extended across the roof, a rare opportunity arose to bring the past alive. In just under twenty-two weeks the class had raised over $30,000, one dollar at a time selling ice cups. Instead of going to Darwin, ten Kunibídji children and four Kunibídji adults travelled with me to Bira Beach in Southern Sulawesi in search of Ndjébbana Loan Words. On the way home we went through Singapore. The opportunity for travel to Indonesia was repeated the following year when we returned to Sulawesi, after selling hot dogs and fruit drinks instead of cordial to finance the trip.

Through these trips, I began to see a change in the position that the Kunibídji children occupied in the school. Due to the limited history of schooling and the cultural mismatch of the Kunibídji community with the school, the Kunibídji children had been labelled as 'wild' or 'bushy' by successive principals and teachers of other language groups. Through fundraising and the excursion, the children had literally worked their way out of this constructed position at the school. The children had challenged the 'ingrained, fatalistic belief in the inevitability and necessity of an unjust status quo' (Burbles and Berk 1999, p. 51) that had limited their potential to connect with an educational system operating in their own country.

The Kunibídji children had proven to the rest of Maningrida that they could reposition themselves by engaging in activities that widened their choices. The transformation of the children was evident as they repeatedly took up the challenge to be 'subjects of history, who are transformed as they transform the world' (Gaddoti 1996, p.xvii). Armed with ways of

knowing how to operate in a class, many of the children began their journey as independent learners of the Balanda lifeworlds.

My own practice as a teacher had also been transformed. I repeatedly attempted to extend the ontological understandings of the different lifeworlds of the Kunibídji children in order to provide the children with more choices. As a teacher I was charged with the responsibility for designing opportunities to increase the number of ways that the children could read and write words as well as the world. A pattern began to emerge as I designed opportunities for the children to practice their social futures outside of the school classroom. While I was paid to teach in a classroom, I found educational experiences with the children in outside environments more rewarding and more effective. Judging by their attendance patterns, the Kunibídji children felt the same way. The informal context away from the classroom proved to be pedagogically sound, as the approach afforded more opportunities for extending the Kunibídji children's knowledge around their homes, under bush shelters, at ceremonies, on camps and on excursions. As Morphet (1996, p.260) suggests, 'the social technology of the school, it would appear, is not able to provide an adequate set of procedures within which the apprenticeship and mediation process can be lodged'. Morphet’s (1996) analysis of schooling is true for Indigenous and non-Indigenous students, from what I have experienced.

An important feature of the informal social contexts was the apprenticeships. These apprenticeships acquired the social practices associated with ways of knowing about a particular knowledge system. Apprenticeships have been identified by Lave and Wagner (1991) as a way people learn at the periphery before moving to the centre of a particular

community. Through these apprenticeships people are 'trained by being scaffolded in joint practice with those already adept at the practice' (Gee 1999, p.186). An important aspect of these apprenticeships is that they provide entry into a community of practice. The knowledge in this community is gained through immersion in collaborative practice. This knowledge may not be articulated in words but rather passed on 'through the socialisation of new members' (Gee 1999, p.186).

One reason that school may be inadequate in providing these apprenticeships to the Kunibídji children is the different values that the school and Kunibídji community were placing on overt instruction. Almost all of the Kunibídji children's apprenticeships outside school took place in the absence of overt instruction, whereas at school, overt instruction was a central feature of classroom pedagogy. I began to seek ways of contextualising any overt instruction in the classroom with Kunibídji apprenticeships outside the classroom. The time spent outside the classroom made my job as a teacher of the Balanda community of practice more effective. While outside the classroom, I was also experiencing a limited apprenticeship in Kunibídji community of practice. The high value I placed on the informal context outside the classroom was my attempt at offsetting the problems associated with the different roles of overt instruction in the Kunibídji and Balanda communities of practice.

When I moved on to teach a class of Kunibídji preschool children, it seemed natural to look for answers to complex questions presented to me by the apprenticeships these children were undertaking before they arrived at school for the first time. As the children were learning to read and write in Ndjébbana at school they did not have opportunities to acquiring the skills

of print based literacy at home. This is due to an absence of books and reading material at home. It seemed only natural, as a teacher, to investigate ways of making Ndjébbana printed texts more accessible to the Kunibídji children at home.

Correcting the absence of texts in the Kunibídji homes would prove to be more complex than selling lots of ice cups. While promotion of texts in the children's first language seemed a natural thing to do, I had ethical concerns about intervening with print literacy into the children's homes. Embracing a critical approach that complemented my action based transformations was necessary to alleviate these ethical concerns. The next section outlines my theoretical journey that culminated in the provision of texts for the Kunibídji children around their homes and provided the intellectual tools and data for this study.

My Theoretical Journey

Against Positivism

As a high school trained maths and science teacher, I brought a largely positivist understanding of the world to a bilingual classroom. What I did not know at the time was that the ideology of domination that was associated with a positivist view of science failed to 'understand its own investment in the *status quo'* (Horkheimer and Adorno 1972, p.22). I did not challenge the relations of production or the power that could be seized through the imparting of scientific knowledge to the students. The science curriculum I taught did not allow investigation into the ideologies that underpinned a positivist view of the world. Kellner (1989) suggests that a positivist theoretical approach was concerned with reproducing existing patterns in society. Blind to this systemic reproduction, the biggest

diversion from this positivist approach, for me, was teaching human reproduction to adolescents each year.

Embedded in this positivist view was the 'cartesian dualism of thought and being' (Horkheimer 1982, p.231). Most of my teaching time was spent challenging the students to think in a scientific way rather than encouraging them to solve the dilemmas faced when 'being' a scientist. My positivist understanding of the world carried over to my view of the students. I would challenge the thoughts behind their actions rather than challenge my own thoughts about what it was like for them to 'be' students.

A Critical Approach

I quickly discovered that a positivist view of the world had little relevance to the worldview of the Kunibídji nation. The social complexities of hunting and gathering in the welfare state (Altman 1987) could not be objectified from a positivist perspective. Without realising, I had begun swapping my positivist epistemology for a critical one, while searching for answers to everyday problems in Maningrida. I believed that my emerging critical epistemology would 'hasten developments that [could] lead to a society without injustice' (Horkheimer 1982, p.221), which seemed like a worthwhile ethic to bring to teaching and living in Maningrida.

Defining injustice in Maningrida is a difficult task. There were multiple injustices that were informed by multiple knowledge systems. Therefore I began to search for an informed approach to the injustice as perceived from the perspective of a Kunibídji child. After many years working with Indigenous Australians, Harris (1990) suggests the Balanda and

Indigenous Australian cultures are antithetical, consisting of more opposites than similarities. Overlooking the problem of homogeneous cultural representations in the above statement, some injustices experienced in one cultural group may be challenged by another group of people. One example directly related to this study is the provision of Ndjébbana printed texts in the Kunibídji children's homes. While the absence of Ndjébbana printed texts in Kunibídji homes could be a measure of a wider educational injustice, the absence of these texts could also reflect the Kunibídji's desire not to engage with Ndjébbana printed texts around their homes. The absence of the Ndjébbana printed texts in Kunibídji homes may be an expression of Kunibídji self-determination. I realised there was an ambiguity associated with the concept of injustice as I operated as a teacher in the context of two antithetic knowledge systems.

Non-Neutrality

Faced with the ambiguity of injustice, I found some solace in the work of Paulo Freire. As I contemplated the educational implications of the actions I was carrying out as a teacher, I began to align myself with the understandings Freire presented about education and politics. Freire (1970) was one of the first educators to explicitly link education and politics in a call to liberate the oppressed by raising their *conscienticizao* or 'critical consciousness'. While I have some concerns about identifying who needs to be liberated, and about definitions of oppression, the important point attributed to Freire is his recognition of the political nature of education. Freire states that 'education is politics' (Freire and Shor 1987, p.61). This suggests that every action I did, as a teacher, or even those I did not do, had implications on where I would be positioning the children I taught.

The position the students occupied in relation to the discourses of power were the focus of a teaching approach that was outwardly political. The repositioning of the students was a process that involved their own critical examination of 'the social and historical construction of those discourses of power as well as critically examining the constructedness of students' subjects positions' (Walton 1995, p.111). The non-neutrality of teaching meant that every single action I performed as a teacher contributed to the students' positioning in relation to the discourses of power. Embedded in my teaching, whether I liked it or not, was a positioning of the Kunibídji students from which they constructed their own position in relation to discourses of their different lifeworlds. Where I was successful in repositioning the students, they were engaged in meaningful and purposeful activities through which they could critically reflect and enact their position in the world.

This conviction about the non-neutrality of teaching has also informed my research in the context of this study. Just as the actions associated with teaching are not neutral, the intervention that is part and parcel of this research has the potential to reposition the participants in both negative and positive ways. My initial concern in this research was to determine whether the distribution of Ndjébbana printed texts to the Kunibídji community was going to be beneficial to the Kunibídji nation. While I asked permission each time I recorded the children reading the printed Ndjébbana texts, I also sought out theory which would also help my understanding of consequences of the actions taken in this study. I reflected on the seemingly collaborative partnerships I had established with the Kunibídji in order to theorise the elements of any relations that appeared beneficial to both the Kunibídji and myself. The general understandings that were gained upon reflection of the collaborative

partnerships are useful in this study to determine whether the distribution of Ndjébbana printed texts will reposition the Kunibídji in any negative ways.

Humanising Praxis

As this study takes place in an informal context, Freire's understanding of humanising praxis is useful. Both the children and myself had experienced a 'reflection and action upon the world in order to transform it' (Freire 1971, p.36). What made this praxis humanising was the critique embedded in the dialogue between the Kunibídji children and myself. I would argue that where this praxis was humanising we were extending each other's idea of being.

Fromm (1978) identifies two conflicting accounts of the human condition. One of these is the 'having' mode of existence which is a natural and inevitable human condition, at least as it is encouraged in the capitalist world. The other is a 'being' mode of existence that 'enables self-actualisation, fulfilment, and abiding peace' (Lankshear 2003, p.56). The 'being' mode of existence is associated with an ontological way of viewing the world. Teaching the Kunibídji children how Balandas see the world was more pedagogically fulfilling, for me, than teaching the children to desire the commodities associated with the Balanda lifeworld. In the same manner, when members of the Kunibídji community took me into ceremony, I was taught about being a Kunibídji while sitting next to many young men I had taught. The ontological distinction, or a sense of what it was to 'be' either Balanda or Kunibídji, informed the transformative action that I attempted as a teacher.

Humanising Praxis is the result of humans pursuing their ontological vocation of becoming more fully human 'through dialogue with others in a critically conscious way' (Roberts 2003, p.174). The ontology of human existence underpinned Freire's ethical understandings which informed the actions and transformations associated with humanising praxis. The understanding of the human condition required a critical perspective to be taken to fully read and write the world. The critical perspective is particularly important when teaching about a knowledge system that is different from that which the Kunibídji children learned at home. This does not in any way suggest that a particular knowledge system is superior to another. What the humanising praxis with the class did reflect was that the children and I were becoming more fully human as we understood what it was to 'be' in each other's lifeworld. We were learning as we were pursuing each other's ontology while 'being' variety of informal contexts.

I found this humanising praxis useful as a non-Indigenous researcher on Indigenous lands. As Agger (1991, p.36) suggests, the 'researcher's own analytical and literary practices that encode and conceal value positions ... need to be brought to light'. As well as the individual researcher's praxis, the discursive patterning that underlies particular value positions needs to be made explicit. Lemke (1995, p.131) adds, 'we need to examine ourselves, examine our own actions, beliefs and values to see how they connect up to the larger patterns and process of the system of which we are a part, to understand how we are part of the problem in order to have any hope of becoming part of the solution.' The critique used in this study to justify the intervention and analysis of the data can also be used to scrutinise my own individual and systemic praxis that I tried to bring to the Kunibídji context. The humanising praxis is an

ethical ideal that informs my actions in this study. After many years of living and working with the Kunibídji community, there is a humanising praxis which overarches this study.

Where the collaborative partnerships worked well between myself and the Kunibídji, there tended to be a tentative phase where the implications of any attempted transformative actions were gauged. Before the children sold the ice cups, for example, I consulted the community and closely monitored how the children were behaving as they were carrying out the activity. Through dialogue, I was able to establish that the children's actions of selling were not conflicting with an understanding of the Kunibídji's ontology. Once this understanding had been established, I began designing a program that promoted the transformative actions associated with 'being' a trader of ice cups.

My role of providing educational opportunity for Kunibídji children was clarified with the achievements of the children. The educational opportunity for the children was not confined to just carrying out a series of actions but also included their critical reflection on the consequences of their action. Lemke (1995,) has noted that action stands in a dialectical relation to theory in any critical praxis. The educational opportunity for Kunibídji children in which I was involved before this study commenced encouraged the children to examine their ideological and discursive positioning in the world.

I entered this study with years of teaching Kunibídji children and living with members of the Kunibídji community. I had years of doing things with the children in order to provide transformative opportunities. As Freire (1971, p.2) has suggested that 'First of all I have to

act. First of all I have to transform. Secondly I can theorize my actions - but not before'. Before I outline the actions and transformations that took place in this study, I feel I could add ‘first of all I have to be’. This provides the researcher with some insight into the ontological perspective of the participants that is a different knowledge system to that of the researcher. The motivation to conduct this study was formulated after my years of ‘being’ on Kunibídji land, and the study was my attempt to match reading of texts with the children’s ways of seeing and ways of knowing.

Discourse

I began to see the absence of Ndjébbana texts outside the classrooms as evidence of the lack of dialogue between the school and members of the Kunibídji community. Humanising praxis is distinguished from dehumanizing praxis by the absence of dialogue in the latter (Roberts 2003). While Freire suggests that dialogue takes place inside some 'kind of program and context', all genuine dialogue is free from authority (Freire and Shor 1987, p.102). The authority implicit in the Ndjébbana Two-Way Program was controlling the distribution of Ndjébbana texts, and this had implications for the effectiveness of the program. Confident that the ontological reasons for the absence of Ndjébbana printed texts from Kunibídji homes could be dispelled, I began looking towards discursive reasons to distribute Ndjébbana printed texts amongst the Kunibídji.

I began to reflect upon why the children would want to access texts around their homes. Perhaps the dialogue between the children with such texts would be closer to the 'ideal speech situation' (Habermas 1990, p.93) than when the texts were read and discussed at

school. An ideal speech situation is one that is free from systemic distortion and embodies the possibility of achieving unconstrained consensus amongst the participants. The reasons for choosing an informal context for Kunibídji children consistently throughout my teaching praxis and in this research were related to my understanding about how these contexts could promote something closer to an 'ideal speech situation' than in a classroom environment.

I embarked upon a discursive research approach that embodied Freire's critical pedagogy and Gee's understandings of social realities. Gee's understanding of discourse will be discussed at length in the next chapter. After doing my best to learn and accommodate the ontological and epistemological understandings of the Kunibídji in relation to the discursive practice, I found myself repeatedly in a position where I believed I could implement a critical approach to solve specific problems. This involved challenging the status quo to enable the Kunibídji to gain a purchase on their position and to decide whether they wanted to change. The praxis of this study challenges the multiple status quos which disempower the Kunibídji. The critical activity that can potentially respond to the disempowerment of the status quos is 'oppositional and involved in a struggle for social change and the unification of theory and practice' (Kellner 1989, p.46).

My theoretical journey has evolved from a positivist to a more critical perspective that also accommodates, at least to some extent, the ontology and epistemology of a minority Indigenous Australian language group. Humanising praxis is a central feature of the this study combining theory, practice and ethical relations between the non-Indigenous researcher and the Kunibídji nation. In respecting the Kunibídji's ontology, this study seeks to provide

transformative action where the Kunibídji are framed as 'critical, praxical Subjects, in control - as far as possible - of their own destinies as creators of history and culture and thus themselves' (Robberts 2003, p.182).

Chapter 1 A critical approach to literacy

Introduction

This study will promote humanising praxis by locating Ndjébbana texts around Kunibídji children's homes in an attempt to extend their ontological understandings. A critical approach to literacy has been taken in this research to integrate Kunibídji knowledge systems with Kunibídji ontological understandings when texts in their first language are read at home. Through interaction with Ndjébbana texts, a critical approach to literacy invites the participants of this study to engage in positive repositioning experiences in relation to the texts promoted by the dominant society and culture.

The approach to Ndjébbana texts taken at the school when this study began seems to follow a functional rather than a critical approach to literacy. This chapter will begin by outlining some of the problems associated with a functional literacy approach to Ndjébbana texts. Although a functional approach to literacy is no longer dominant in many schools, the teaching of Ndjébbana print literacy at school tends to involve transferring from Ndjébbana to English the skills of reading and writing. The discussion about functional literacy will be followed by outlining the critical approach to literacy that is embedded in the New Literacy Studies (NLS). By focusing on the local context in which literacy is to be learnt, the NLS provides a critical approach to literacy, in this case through emphasis on the participant's interactions with Ndjébbana texts. The NLS will be presented as different contextual layers that articulate how the social elements of literacy are associated with the various meanings that are made around texts. This chapter concludes that the social context of literacy, relevant to this study will include Ndjébbana

texts, interactions amongst Kunibídji children reading the texts, beliefs about the value of reading the texts held by members of the Kunibídji community, the way the texts fit into the everyday social practices of the children at home and the understandings that members of the Kunibídji community have about self-determination.

The limitations of functional literacy

The effective engagement of people in all activities in which literacy is normally assumed in a culture or group (Gray 1956) underpins the skills based approach in functional literacy. The origin of the view of literacy as a set of skills grew from a belief that the purpose for learning literacy by students at school was to support the expanding technological world (Bigum & Green 1992). Functional literacy became the dominant approach to literacy in post-war industrialised countries. While functional literacy was a relative concept, being linked to the contexts where it is used (Barton 1994; Cummings and Sayers 1995), the relative nature of functional literacy was rarely reflected in the practice of literacy teaching (Barton 1994). Functional literacy 'implies a level of reading and writing that enables people to function adequately in social and employment situations typical of late twentieth century industrialised countries' (Cummins and Sayers 1995, p.88).

The Ndjébbana two-way program is designed to support the Kunibídji students' learning of English by attaining a basic level of reading and writing in Ndjébbana. A functional approach to Ndjébbana print literacy seems to be a policy of the school in Maningrida as a way of teaching the Kunibídji children skills of literacy that are transferable between Ndjébbana and

English. Embedded in functional literacy is the perceived 'need' for the Kunibídji children to learn the skills of reading and writing in English.

There are several reasons why Kunibídji children should not learn how to read and write Ndjébbana through a functional approach to literacy. For a start, there are problems associated with the passive expectations associated with functional literacy for the participants. Lankshear and Lawler (1989, p.64) suggest that to be functionally literate 'comprises a minimal, essentially negative and passive state.' I entered this study not knowing if the absence of Ndjébbana texts in the Kunibídji children's homes was associated with a passive state of functional literacy.

Another demonstration of the problems with a functional approach to Ndjébbana print literacy is the absence of any explicit links between Ndjébbana print literacy and Kunibídji self determination. There are very few examples where the Kunibídji community have used Ndjébbana print literacy to demonstrate their 'leading, commanding, mastering or controlling' (Lankshear and Lawler 1989, p.64) of their own social context. One of the reasons for not taking a functional approach to Ndjébbana print literacy in this study is to promote the Kunibídji's social practices of control in their reading of Ndjébbana texts.

A functional approach to Ndjébbana literacy is also inadequate in this study as such an approach is based on the individual deficits of the readers and writers. With this approach, any failure that is exhibited by the Kunibídji children to learn the skills of reading and writing Ndjébbana print literacy is assumed to lie with the children themselves. The approach

does not take into the account the elements that are systemically embedded in the school context that may conflict with the Kunibídji children's knowledge systems. A different approach to literacy is needed in this study that will support the Kunibídji's ways of knowing in order to make Ndjébbana print literacy a more natural extension of the children's developing knowledge system. A critical approach to literacy may explain the failure of the Kunibídji children to negotiate Ndjébbana print literacy in more systemic terms than the lack of individual inabilities. Due to the general low levels of Ndjébbana functional print literacy amongst the Kunibídji children, understandings drawn from the children reading texts at home could provide useful insights into best pedagogical practice in the Ndjébbana two-way program.

The Kunibídji children's reasons for learning Ndjébbana print literacy are not adequately highlighted in a functional approach to literacy. As previously mentioned the ability to function in a typical late 20th century industrialised society is overshadowed at Maningrida by the need to read and write English as the main purpose for learning Ndjébbana print literacy. As an Indigenous literacy, Ndjébbana may be more effectively learned by the students by examining the reasons for which members of the Kunibídji community wish to make meaning of their world. A better approach to teaching Ndjébbana print literacy is to associate the learning of Ndjébbana with the self determination of the Kunibídji community. An approach that promotes the social practices of literacy rather than the skills of reading and writing, I consider, will be of more use to Kunibídji children.

Another reason for not adopting a functional approach literacy in this study is that I am attempting to facilitate the assertion of the Kunibídji's voice through literacy. Functional literacy has no place in this study which seeks to articulate the social voices of the Kunibídji that develop through their interaction with the Ndjébbana printed texts in their own homes. Functional literacy limits the heterogeneity of these voices by highlighting the skills of reading and writing rather than the humanizing praxis that contextualises the social practices of Ndjébbana print literacy. The alternative critical approach to literacy begins with a social focus that provides the participants with opportunities to express their own voice as an integral part of their experience with Ndjébbana texts.

New Literacy Studies

The New Literacy Studies (NLS) grew out of research that challenged the prevalent skills based approach to literacy. The NLS was developed as part of a broader social turn away from a focus on individual behaviour and individual minds toward a focus on social and cultural interaction (Gee 1999). The social situation, it was claimed, played a central role in understanding literacy. This relationship between the social context and how meaning was being made highlighted a move away from individual competencies that were seen as independent of a social context. Gee (1999) points to the New Literacy Studies as being one area amongst many others, such as cognitive linguistics, modern sociology and postmodernism, that have incorporated the social situation in their theory. Many of these domains have adopted not just a socially situated approach but also a more discursive approach that challenges the construction of marginalised perspectives.

A mark of the New Literacy Studies is a bottom up approach to literacy. Effective literacy pedagogy, according to the NLS argument, begins by 'understanding the literacy practices target groups and communities are engaged in' (Street 2001, p.1) and learning how to design more culturally sensitive programs rather than programs based on what people are assumed to 'need' (Street 2001). The bottom up approach to literacy in the NLS attempts to understand how literacy is made meaningful in everyday life for the participants in order for them to engage their interest so that more effective literacy programs can be designed. The opportunities for the Kunibídji to engage in the humanising praxis of repositioning themselves with these texts, constructs the NLS in this research as a critical approach to literacy. The critical approach to literacy in this study is a useful lens through which the emerging Kunibídji's social practices can be examined when Ndjébbana texts are introduced into the children's homes. The understandings are useful as they can be used to inform the Ndjébbana Two-Way program at the school. Without the teachers and literacy workers at Maningrida School knowing what the Kunibídji children consider as useful with reference to the Ndjébbana texts, the teaching of literacy in Ndjébbana two-way program will have limited outcomes.

Trying to identify the roles Ndjébbana literacy may play in the lives of Kunibídji children becomes difficult due to the complexity of the social context. The children's interactions with the texts and amongst themselves may be informed by individual behaviours, common beliefs amongst the readers and the power structures involved in reading the text. Maybin (1999) has suggested that there is a contextual layering in literacy through which meanings are related to the different ways of conceptualising the context. The contextual layering in

literacy can be used to distinguish the understandings made by the children about the text, interactions, values, power and development that may occur when reading Ndjébbana printed texts. Obviously there will be some interaction between the layers. Without distinguishing the different social contexts of literacy, however, the process of understanding literacy in this study becomes impossible. The social context from a NLS perspective provides a framework that can be used as a critical approach to literacy in this study. The bottom up approach to literacy in the NLS elicits meaning from the texts with reference to the social world of the participants. The social contexts associated with the NLS provide the framework for the critical approach to literacy that is used in this study.

Literacy as a social practice

The idea that social practices are embedded in contexts of literacy challenged the understanding that being literate was simply a case of 'being able to read and write' (Barton 1994, p.38). Associated with the literacy context were the ‘participants, activities, performance indicators, appropriate times and places, tools, dress and eligibility’ (van Leeuwen 1993, p.204). Literacy, it was argued, was being mediated through a variety of contextual variables that influenced how meaning was made. As literacy became regarded in the NLS as an activity 'located in the space between thought and text' (Barton & Hamilton 1998, p.3), literacy became understood as a social practice.

One of the first studies to conceptualise literacy as a set of social practices was that of Scribner and Cole (1981). As psychologists, they found that the abstraction, classification, memory and logic associated with literacy were due to an individual's social context

(Scribner & Cole 1981). There are graduations of literacy which reflect the multiplicity of values, uses and consequences which characterise writing as social practice (Scribner & Cole 1978). The complexity of the social practice associated with the context of literacy has grown over the years to include literacy events, literacy practices, discourses and ideas about development.

Literacy Events

The social practice of literacy was first conceptualised as 'events' in the study of sociolinguistics. Speech events are ‘activities or aspects of activities that are directly governed by rules or norms for the use of speech’ (Hymes 1994, p.15). A similar understanding of the events of literacy was also developed to explain the activities demonstrated by participants while reading texts.

Literacy events were first conceptualised in a study of preschool children as attempts by them to produce graphic signs individually or in a group (Anderson, Teale and Estrada 1980). The concept of ‘literacy events’ was later defined by Heath (1983, p.386) as occasions when ‘written language is integral to the interactions amongst the participants’ and where written language is central to the participants’ interpretive processes and strategies.

Heath (1982) compared the language socialisation between two working class communities (Trackton and Roadville). The way language was ‘socialised’ in these two communities was then compared to the language practices of the families of 15 primary school teachers in a middle class community (Maintown). Heath (1982) found that the different social

interactions of the children with their caregivers in each community were associated with different ‘ways with words’ that the children demonstrated in each community. Each community had its own way of eliciting meaning from printed texts and its own way of deriving and using knowledge from printed texts (Heath 1982). Literacy events are therefore important in understanding ‘what people do with literacy’ instead of focusing on what literacy can do for a specific group of people (Barton 1994, p.26).

There are several reasons why ‘literacy events’ are important in the understanding of literacy as a set of social practices. The first is that literacy events link oracy and print literacy. Ong (1982) identified a great divide between the social practices of oracy and print literacy. Street (1995) suggests that the divide should be seen as a continuum. Literacy has been suggested to include fluency and articulacy in oracy as well as traditional skills of reading and writing (Davies, Grove & Wilkes 1997). Spoken language plays an important role in the mediating of literacy events. Participants often make meaning from literacy events through a combination of interactions with the texts and interactions with other participants.

The importance of literacy events is also highlighted by the sociocultural practices that frame interactions with texts. Heath (1982, p.74) suggests that ‘literacy events’ need to be interpreted in relation to the 'larger sociocultural patterns, which they exemplify or reflect'. There is an understanding here that the effects of literacy are 'produced by historically and culturally situated social practices of which reading and writing are only bits, bits that are composed and situated in different social practices' (Gee 1996, p.42). Literacy events are historically and socially situated so that the meaning making systems of the participants are

intertwined with the way that literacy is composed in a particular context. Literacy events are, therefore, best understood with reference to the sociocultural patterns of the participants in the literacy study.

Another feature of this presumed sociocultural patterning of literacy is a reflexive relationship between literacy and social practices. Luke (1992) makes the important point that, while literacy is constructed by individuals and groups as part of everyday life, it is also constructive of everyday life itself. In other words, while literacy practices are informed by sociocultural patterning of the context, over time the sociocultural patterning is informed by the social practices of literacy. This reflexive relationship between literacy and social practices is expected to be demonstrated through the literacy events that are examined in this study. Some of these literacy events may provide enlightenment about the Kunibídji's sociocultural understandings with Ndjébbana printed texts. On the other hand, the literacy events associated with this study may provide insights into the extent to which the Ndjébbana texts are representative of the sociocultural patterns that are lived by the members of the Kunibídji community.

The social practices of literacy can also be articulated by the visible nature of 'literacy events'. Hamilton (1999) has identified the visible elements of 'literacy events' from photographs in newspapers. She classified these visible elements of 'literacy events' as the participants, the physical settings, the artefacts including texts and the activities or actions performed by the participants in the photos (Hamilton 1999).

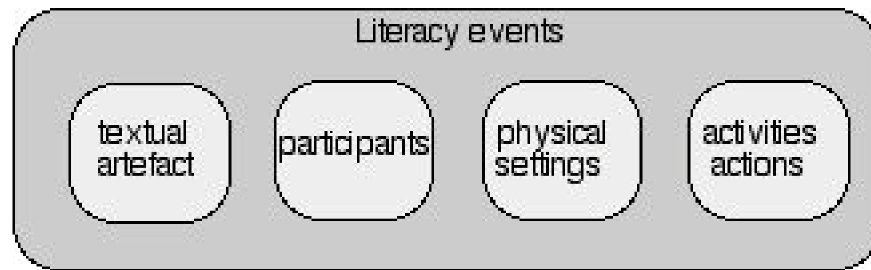

Figure 2. The visible elements of ‘literacy events’ as identified by Hamilton (1999)

Figure 2 provides a schematic representation of Hamilton's visible elements of ‘literacy events’. While there are interactions between the elements, such as between the participants and the textual artefacts, any ‘literacy event’ can be influenced by all four elements.

The notion of ‘literacy events’ is useful in this study as it provides an initial way of conceptualising the research problem. Little is known about the ‘literacy events’ that occur with Ndjébbana texts in Kunibídji homes, apart from the general fact that the texts are scarce and often have a short life. The scarcity of Ndjébbana texts in the homes of Kunibídji children will most probably impact on how the children construct meaning from Ndjébbana texts at school. Likewise, the scarcity of Ndjébbana texts in Kunibídji homes will most probably affect how the Kunibídji children exclude using Ndjébbana texts to make meaning from the world. Heath (1983) suggests that the participants’ frame of reference to any book will impact on the understandings they bring to the school about the book. The literacy events investigated in this study will illustrate the Kunibídji children’s insights into to the

roles of Ndjébbana texts in their own homes. Some of the roles of Ndjébbana texts assigned by Kunibídji children may be incorporated into the Ndjébbana Two-Way Program.

Out of the four visible elements of literacy events identified by Hamilton (1999), the textual artefacts are of particular interest in this study. The texts created for this study were the result of a collaborative effort between Kunibídji and Balandas over many years. While the design and creation of the texts will be discussed at length in the section on technology, the texts used in this study attempted to integrate print and oral narratives.

Also of interest in this study is the consideration of the methodology used in the research of literacy events. Literacy events have been researched using an ethnographic approach, often known as 'practice accounts of literacy' (Barton 1994, p.24). Some of these ethnographic approaches to literacy are over twenty years old and are still in use today. ‘Literacy events’ range from a micro-ethnographic example of a literacy context such as a Bangladesh market (Maddox 2001) or a taxi rank (Breier, Taetsane & Sait 1996). The social practices that occur with a series of texts in a minority Indigenous Australian language would appear to be one more micro-ethnographic context of literacy. Any literacy events that are documented in this study will provide evidence of the Kunibídji children’s social practices when provided with the opportunity to read Ndjébbana texts.

An important feature of ‘practice accounts of literacy’ is that an examination of literacy events corresponds with a bottom up approach to literacy. Such an approach begins with the social practices of the participants in everyday settings rather than, for example, with a set of

outcomes from a national literacy curriculum. In the bottom up approach to literacy, literacy events can reveal what the participants find meaningful and relevant in their interaction with texts.

Another interesting methodological consideration when studying literacy events is the way oral and written narratives are classified by the researcher. Heath (1983) suggested that researchers typically construct a dichotomony between oral and written narratives while participants do not usually construct such a difference. Researchers tend to compartmentalise the different narrative forms for research purposes whereas participants utilise the two forms to make meanings. As part of this study I have attempted to integrate these two forms of narrative in the Ndjébbana texts to make the texts more accessible to Kunibídji children. The literacy events that are documented in this study will reflect the integration of written and oral narratives in the Ndjébbana texts. I have attempted in this study to integrate oral and written narratives to report the findings of this study in a meaningful and valid form.

Having outlined the importance of the Ndjébbana texts as a visible element of the literacy events in this study, I am in a position to begin building the contextual layers that make literacy a social practice. The artefact of the Ndjébbana texts in this case provide the first contextual layer to be dealt with in more detail in the technology section of this thesis. At this point, it is important to realise that the Ndjébbana texts could not be purchased from the local educational bookshop or even from the school in Maningrida, as they did not exist in a form that integrated oral and written Ndjébbana narratives. Although the Ndjébbana texts which

were created for this study would have been a thesis in itself, I was interested in documenting the way these texts were received by Kunibídji children in their homes.

Literacy events involving the interaction of Kunibídji children with the Ndjébbana texts in their own homes will be presented as a second element in the contextual layering in the social practice of literacy. Figure 3 demonstrates the relationship between the Ndjébbana texts and the literacy events in this study. It depicts the Ndjébbana texts as textual artefacts that will be mediated by the participants (members of the Kunibídji community) in a physical setting (the Kunibídji children's homes) through activities with the texts.

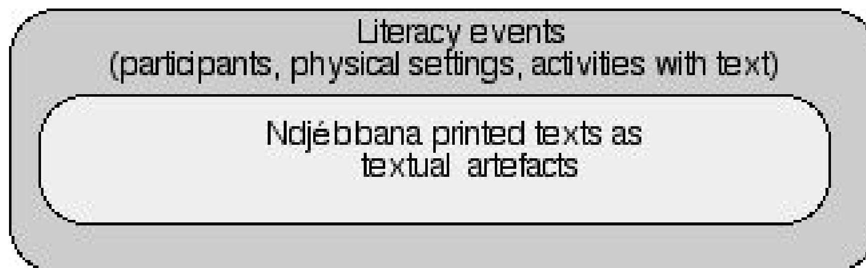

Figure 3. Ndjébbana printed texts as the focus of the visible 'literacy events' in this study.

Literacy Practices

The third contextual layer I will consider in understanding the social practice of literacy is literacy practices. According to the NLS writers, literacy practices are the values and beliefs that are embedded in the larger sociocultural patterns in which the 'literacy events' occur. Literacy practices incorporate not only 'literacy events' but also the 'folk models of the events and the ideological preconceptions that underpin them' (Street 2001, p.11). Literacy

practices must therefore be seen to include values, attitudes, feelings and social relationships (Street 1994, p.12) as well as the simple behaviours of participants in ‘literacy events’. Barton and Hamilton (1998, p.7) suggest that literacy practices, seen in terms of contextual layering, have become the basis for ‘a social theory of literacy’.

Hamilton (1999) has identified the significance of visible ‘literacy events’, and has also articulated the importance of the inferred and invisible elements of literacy practices. Literacy practices can only be inferred from observable elements of ‘literacy events’ because they embody invisible constituents such as knowledge, feelings, values and purposes (Hamilton 1999). The literacy events that are documented in this study will be analysed for the inferred literacy practices held by the Kunibídji children.

Multiple Literacy Practices

There are multiple literacy practices represented in any literacy event. When the visible ‘literacy events’ are overlayed with the inferred literacy practices, there are multiple possible readings of the same social practice that is labelled 'literacy'. Hence, literacy does not mean the same thing in all contexts and societies (Street 1994). Due to the diverse ways that the literacy practices of the Kunibídji are dependent upon their cultural and social norms, it makes sense to talk about ‘multiple literacies’ rather than ‘literacy’. There are several implications regarding the use of multiple literacies in this study.

The first implication of using the concept of multiple literacies in this study is that the methodology must allow ideology of the participants to be integrated into the model of

literacy. Street (1984) has written extensively about the integration of the participants' ideology in literacy as an ideological model of literacy. The multiple literacies are associated with the multiple ways literacy is negotiated between the individual concerns and the institutional agendas of a group of people. An 'ideological' model of literacy incorporates 'the site of tension between authority and power on one hand and individual resistance and creativity on the other' (Street 1984, p.49). The multiple ways these tensions are negotiated by the Kunibídji will provide insights into whether the Ndjébbana texts in their homes are perceived by the children as beneficial within their concept of literacy. The negotiated process of literacy is established within an 'ideological' model in which 'the uses and meanings of literacy entail struggles over particular identities up against other identities, often exposed ones' (Street 1995, p.135). Needless to say, this study takes an 'ideological' approach to literacy in which literacy practices are seen as contesting the values and beliefs embedded in the expected 'literacy events'. Part of the praxis of this study is to gain an insight into the Kunibídji's ideological understandings regarding access to Ndjébbana texts in their homes. The Kunibídji's ideological understandings regarding the value of such texts in their homes, has not yet been documented.

A second implication of incorporating an understanding of multiple literacies practices into this study is that it recognises the multiple lifeworlds that literacy supports. Herbert and Robinson (2001) suggest that there are different literacies that serve different purposes in different lifeworlds. There are myriad research questions arising from the multiple literacy practices associated with the multiple literacies in a minority Indigenous Australian language

context. This study will investigate a particular set of Kunibídji social practices that are associated with the literacies used to read Ndjébbana texts in the Kunibídji children's homes. An important feature of these literacy practices is that they will be negotiated in the absence of any teacher. Any resultant insights or understandings will be useful to the Ndjébbana two-way program as they will potentially provide the teachers with knowledge of the aspects of Ndjébbana literacy that are independently negotiated by the Kunibídji children.

At this point it is worth reiterating how the contested literacy practices that are enacted around Kunibídji homes may exemplify Kunibídji's ontological understandings about Ndjébbana texts. One of the reasons for carrying out the study in the context of the Kunibídji children's homes is to explore how Kunibídji children contest their access to Ndjébbana texts in this context. The access of the children to Ndjébbana texts, as well as their social practices enacted around the texts, will hopefully illustrate the contested literacy practice in this study. As contested practice is analysed, the ontological understandings that Kunibídji children have about the accessibility of Ndjébbana texts, in this particular lifeworld will be better understood.

Many NLS scholars have articulated how participants use texts in their everyday social practice (Papen 2001; Malan 1996; Stites 2001). Such studies usually endeavour to show how the texts are ontologically integrated with the participants' understanding of literacy. This study will investigate how my intervention in providing Ndjébbana texts to Kunibídji children around their homes matches the children's ontological understandings associated with their own literacy practices.

While multiple literacies can be associated with the full variety of the participants, social practices, the distinctions between the vernacular, local and dominant literacies may help me to articulate the kinds of literacy practices that will be examined within this study. Camitta (1993, p.228), in a study of literacy practices amongst Philadelphia High School Students, identified vernacular literacies as those 'closely associated with culture which is neither elite nor institutional which is traditional and Indigenous to the diverse cultural processes of communities as distinguished from the uniform, flexible standards of institutions'. While vernacular literacies are learned informally and their use is integrated with everyday activities, they are still subject to regulation by social pressures of different groups (Barton & Hamilton 1998, p.253). By identifying at least to some extent, the literacy practices of Kunibídji children, this study will be identifying the social pressures associated with reading Ndjébbana texts as a vernacular literacy. Vernaculars demonstrate 'alternative uses of reading and writing within the same language system' (Street 1994, p.15). Particular social pressures may reflect how the Kunibídji children negotiate Ndjébbana texts in their own homes as a vernacular literacy.

Local literacies, as opposed to vernacular literacies, are 'invented often by Indigenous peoples in the face of dominant literacies of colonial powers' (Street 1994, p.13). Although many Indigenous literacies existed prior to non-Indigenous colonisation, local literacies currently tend to focus on the new mediums of writing that Indigenous people have developed during the period of colonisation. Printed Ndjébbana, however, only partially fits the concept of a local literacy because the orthography of Ndjébbana has been created in

collaboration with non-Indigenous agents. Such collaboration was only instigated by a government policy that seemingly did not take into account the Kunibídji's local literacy practices. Since Ndjébbana print literacy was not 'invented' by the Kunibídji as an ideological stance against dominant colonial literacy practices, it would be misleading to consider printed Ndjébbana as local literacy.

Dominant literacies are those associated with formal organisations and, as such, are given high cultural and legal value (Barton & Hamilton 1998, p.252). Regarding Ndjébbana print literacy as a dominant literacy is also problematic. When Ndjébbana print literacy was first initiated as part of the bilingual language policy in some Northern Territory schools, Ndjébbana print literacy was part of the dominant literacies of the school in Maningrida. Because they were part of the dominant literacies of the school, many Indigenous Australian language programs were used as a bridge to enable Indigenous Australian children to learn the skills to read and write English. Dominant literacies have been taught in some Indigenous Australian schools in bilingual programs that taught the students vernacular literacies as well. Amery (1998) suggests that when these programs began around the mid seventies, many Indigenous Australian bilingual language programs were assimilationist as the primary aim of the program was to facilitate the acquisition of English. As Indigenous Australians gained more control over education and schools in their communities, language maintenance became a main aim (Amery 1998).

This study will provide an opportunity for Kunibídji adults to evaluate the importance of having Ndjébbana texts in their children's homes. Such opportunities, potentially, will

promote the control Kunibídji adults have over their children's language programs as texts become available in the community. Any literacy practices that are recorded in this study will be examined for the way in which members of the Kunibídji community demonstrate control over the Ndjébbana texts as a way of enacting their self determination with their own language.

Due to the complex Kunibídji social context and the changing purposes for reading Ndjébbana texts, a multiplicity of literacy practices is expected in the literacy events in this study. As Barton and Hamilton (1998, p.11) state, 'literacy acts as evidence, as display, as threat and as ritual' to reflect the diverse purposes of people who engage in literacy events. This study may find a variety of Kunibídji literacy practices in the interactions of members of the Kunibídji community with the Ndjébbana texts. These practices are likely to demonstrate that there are multiple roles of printed Ndjébbana for the Kunibídji. The possible emergence of new kinds of literacies in this study justifies the bottom up approach to literacy that is advocated within the NLS.

The multiplicity of literacy practices is illustrated in figure 4 relative to Ndjébbana texts and literacy events. Just as a single Ndjébbana text can lead to multiple literacy events, a single literacy event can incorporate multiple literacy practices.

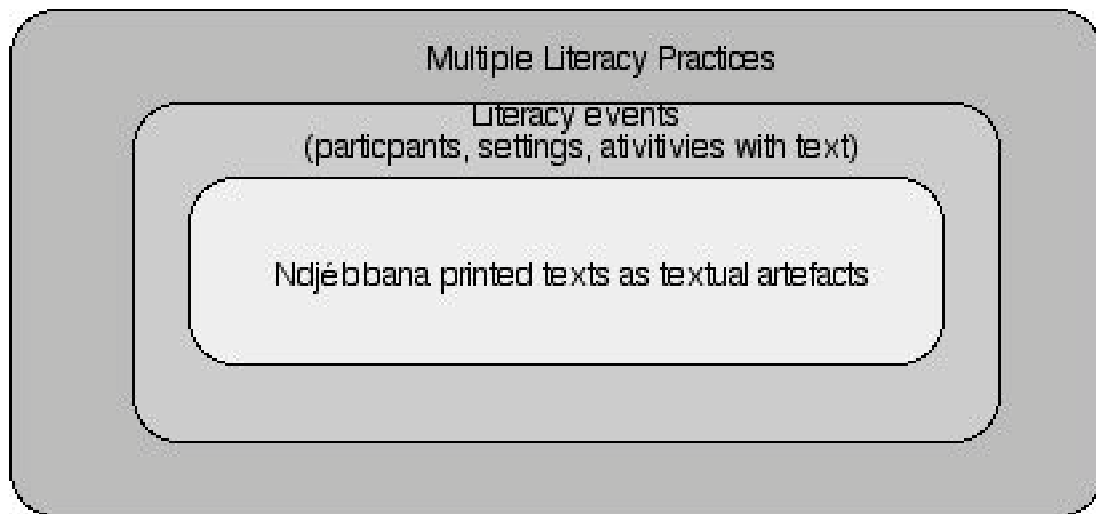

Figure 4. Multiple literacy practices with reference to ‘literacy events’ and texts.

Underlying the interactions in the literacy events is the ideology of Kunibídji beliefs with reference to Ndjébbana texts. The social context of literacy that includes the texts, literacy events and literacy practices of the participants, is also influenced by power. A useful way of understanding the power relations that underpin this study is to frame the Kunibídji children’s use of Ndjébbana texts with reference to the concept of discourses.

Discourses

The term 'discourses' has been used to describe power relations (Foucault 1972), language practices (Barton & Hamilton 1998), communities of practices (Lave & Wenger 1991) and social change (Fairclough 1992, 2000). A discourse can be defined as a construction of some aspect of reality from a particular point of view (New London Group 1996). From a literacy perspective, discourses are important in contextualising the power embedded in the meaning making processes of literacy.

Gee (1996) has conceptualised discourses in the context of literacy in two ways based on their function and their domain. As a functional approach, Gee distinguishes between ‘Discourse’ and ‘discourse’. There is a ‘discourse’ of ‘connected stretches of language that make sense’ (Gee 1996, p.127) and a ‘Discourse’ of ‘ways of displaying membership in a particular social group’ (Gee 1996, p.128). Issues of power and control tend to emerge when literacy is associated with membership of a particular social group.

Although this study, on the face of it, is about the reading of Ndjébbana texts by Kunibídji children, the 'discourse' examined will be confined to the oral Ndjébbana spoken in the literacy events with Ndjébbana texts, as well as the language used in the texts themselves. The 'Discourses', or membership with the social group involved in reading these texts, will be of prime importance in this study. The use of textual and social practices by Kunibídji children with Ndjébbana printed materials will have implications for the Ndjébbana Bilingual Program at the school. By identifying, as far as I can, the ‘Discourse’ associated with Kunibídji children reading the Ndjébbana texts at home, this study will attempt to outline realities that are important to the children that could be incorporated in the teaching program at school.

Discourses have also been conceptualised by the level of formality associated with the context in which they are used. Gee (1996) has identified primary and secondary Discourses that relate to home and institutional contexts respectively. 'Primary Discourses are those to which people are apprenticed early in life during their primary socialisation as members of

particular families within their sociocultural settings' (Gee 1996, p.137). Secondary Discourses are 'those to which people are apprenticed as part of their socialisation within various local, state and national groups and institutions outside early home and peer-group socialisation' (Gee 1996, p.137). Gee suggests that primary and secondary Discourses lie on a continuum.

Some association can be made between Discourses and literacies. Both primary Discourses and vernacular literacies are linked by the strong influence the family has on literacies acquired at home. Likewise secondary Discourses and dominant literacies tend to be developed and reinforced by the participants' conformity to institutional values of the schools and other organizations. These may be different to the Discourses and literacies of their home.

Gee (1996) further distinguishes between primary and secondary Discourses by suggesting Primary Discourses tend to be acquired while Secondary Discourses are most often learned. Krashen (1985) has distinguished between models of acquisition and learning. Acquisition is a subconscious process, the results of which are usually not consciously noted, while learning is more about the practice of error correction that involves adjusting to our conscious rules (Krashen 1985).

Primary Discourses are acquired by a process of trial and error within social groups without any formal teaching. Secondary Discourses tend to be learned through overt instruction that involves explanation and analysis and some metaknowledge about the matter (Gee 1996).

Distinctions between primary and secondary Discourses are useful to this study as they highlight the literacies associated with providing the opportunity for Kunibídji children to read Ndjébbana texts at home. There is an understanding that the literacy events in this study will incorporate many social practices already familiar to Kunibídji children. Some of the potential benefits of Kunibídji children acquiring the literacies embedded in the Ndjébbana texts as a primary Kunibídji Discourse will be presented in the findings of this research. The bottom up approach to literacy of the NLS provides a framework for articulating literacy practices of the participants in order to identify the primary Discourses that are acquired. By establishing the Kunibídji's use of the primary Discourses with reference to Ndjébbana texts, this study will inform the process of learning Ndjébbana print literacy at the school as a secondary Discourse.

An alternative way of viewing this research, with reference to Discourses, is that it is an attempt to transform Ndjébbana printed texts from a secondary to a primary Discourse. Most of the Ndjébbana printed texts are stored at the school consequently, printed Ndjébbana has become associated with a dominant secondary institution. The literacy events that will be recorded as part of this research will provide evidence of the benefits or risks associated with transforming printed Ndjébbana into a primary Discourse of Kunibídji children.

One of the reasons for promoting Ndjébbana print literacy with Kunibídji children as a primary Discourse, stems from my understandings of bilingual education. Bilingual theories suggest that children can learn print literacy most effectively in their first language because

they can draw on years of acquired aural and oral language that complements the new symbols associated with written text. As this study is linked to the promoting of access by Kunibídji children to Ndjébbana printed texts as a primary Discourse, the Kunibídji children will have opportunities to acquire the symbols associated with written Ndjébbana in their own homes.

There is a strong pedagogical argument for promoting Ndjébbana text as a primary Kunibídji Discourse. Gee (1996, p.146) has argued that the mastery of a secondary discourse is strongly associated with 'primary Discourses (having) adopted some of the features of … dominant Discourses'. By providing access to printed Ndjébbana materials in the home environment, there will be an easier transition from the children's acquired oracy in Ndjébbana to written textual practices associated with secondary Discourses at school. This study will investigate whether the Kunibídji children want to acquire the literacies associated with Ndjébbana texts in their own homes as a primary Discourse. Ndjébbana print literacy may be facilitated as a secondary Discourse where the children want to acquire the literacies associated with printed Ndjébbana texts at home.

The role of Ndjébbana print literacy in the Ndjébbana two-way program may need further consideration if the children have no interest in incorporating printed Ndjébbana texts as a primary Kunibídji Discourse. If this were the case, Ndjébbana print literacy would be almost exclusively constructed by the children as a secondary Discourse, having little relevance to their everyday social practices. On the other hand, this study may find that Kunibídji children choose to read Ndjébbana texts at home. In this case, the social practices concerning the

allocation and distribution of Ndjébbana texts across school and home contexts will need to be addressed, both from a pedagogical and ideological perspective. Regardless of the outcome, the immediate concern of this study is the promotion of access by Kunibídji children to printed Ndjébbana materials in Kunibídji homes.

Providing opportunities for Kunibídji children to extend their primary Discourses to include the literacies associated with Ndjébbana texts is closely related to the humanising praxis promoted by this study. Such access will provide opportunities for Kunibídji children to adopt a critical approach to literacy. Walton (1995, p.6) suggests that critical literacy entails 'access and command over a range of contexts, texts, discourses and mediums'. The promotion of access to Ndjébbana printed texts in the Kunibídji children's homes may provide transformative opportunities provided for the children as they negotiate these texts as a primary Discourse. A feature of this study is the opportunities for the children to transform their primary Discourse while extending the ways in which meaning is being made in a minority Indigenous Australian language.

The idea that Kunibídji children can have fun while reading Ndjébbana texts is an important aspect of the literacy practices of this study. Heibert (1994, p.391) has suggested that authentic tasks often 'involve children in the immediate use of literacy for enjoyment and communication'. I expect Kunibídji children will enjoy reading the Ndjébbana texts at home. Kunibídji children will not be forced to read the Ndjébbana texts in their home environment as they are at school, but may find some benefit in taking part in the social practices that will hopefully emerge around the texts. For example, any jokes that develop in the literacy events

will be an important and enjoyable way of displaying memberships with certain primary Kunibídji Discourses. The quality of the children's engagement with Ndjébbana texts as part of their primary Discourse may lay the foundations for their willingness to learn other text based literacies at school. Having fun with Ndjébbana texts in their own homes may turn out to be an integral part of the Kunibídji children's primary Discourse.

Fillmore (2004) suggests the family are essential in providing children with a sense of belonging, knowledge of who one is, and knowing one's responsibility to self, family and community. Buckingham and Scanlon (2003, p.191) consider that the family is perhaps the 'most significant location of children's learning'. The literacy practices in this study will be designed to promote the importance of family literacies while providing the children with opportunities to have fun while reading at home.

The Kunibídji primary Discourses are presented as another contextual layer in this study, as shown in Figure 5. This figure displays the multiple literacy practices that are framed by the primary Kunibídji Discourses in this study. The literacy practices enacted by Kunibídji children as they engage with Ndjébbana texts will be associated with other primary Discourses they have acquired.

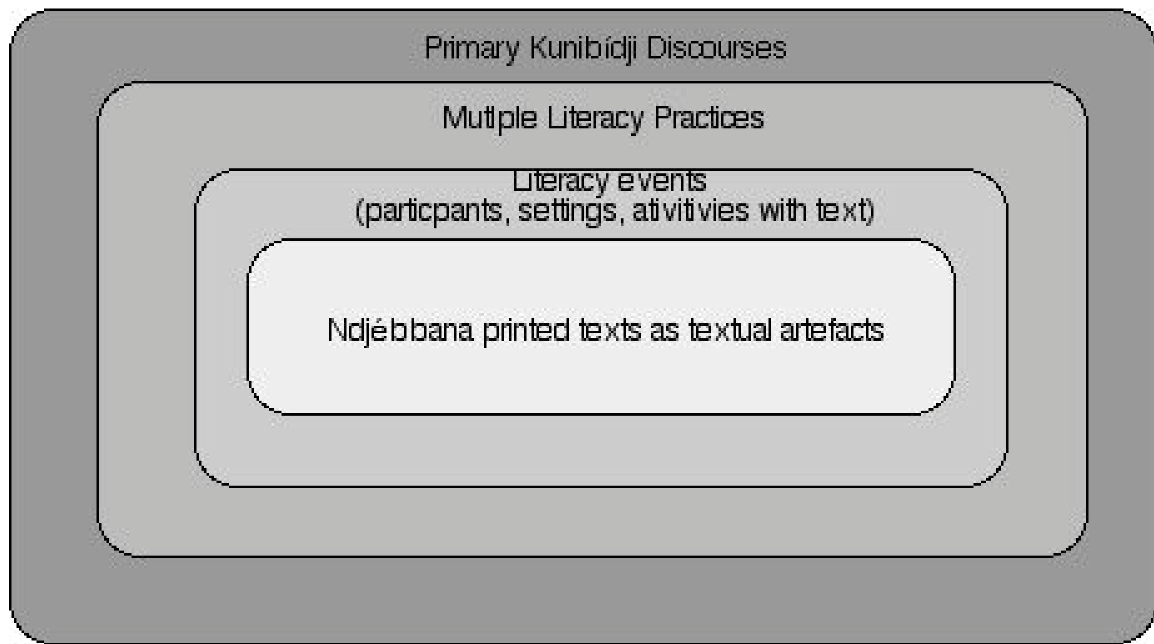

Figure 5. The Primary Kunibídji Discourses that contextualises the literacy practices.

Not all critical approaches to literacy attempt to articulate literacy practices that are ‘sensitive to context and to local need’ (Street 2001, p.14) as prescribed by the NLS. Some critical approaches to literacy focus on the participants’ competencies with secondary Discourses. The New London Group’s (1996) ‘pedagogy of multiliteracies’, for example, promotes the ‘multiplicity of communications channels and media, and the increasing saliency of cultural and linguistic diversity’ as part of a critical approach to secondary Discourses. The intervention associated with this study is suited towards examining Kunibídji literacy practices in relation to the needs of the participants’ primary Discourses. One of the reasons for approaching the Kunibídji’s literacy practices as a primary Discourse is that some of the developmental paradigms held by members of the Kunibídji community may be revealed.

Developmental Paradigms

The understandings that members of the Kunibídji community have about development may provide an overarching purpose for literacy acquisition and learning. Understandings of self determination held by members of the Kunibídji community will influence the way meanings are negotiated and made when reading texts. The motivation for the children to acquire some of the literacies associated with Ndjébbana texts at home could be strongly associated with their parents' understandings of community development.

The understandings of community development held by the participants are another contextual layer of literacy that is important to this study. Understandings of development combine the values of the literacy practices with the power relations of the Discourses to project a future benefit to the community for their current engagement in literacy events. One of the reasons that teaching at the school is not effectively educating Kunibídji children in Maningrida may be that the understandings of development embedded in the secondary Discourse are not congruent with those enacted by the community in their primary Discourse. The secondary Discourse of school cannot predict and accommodate the kinds of community development aspired to by a small group of marginalised minority Indigenous Australian language speakers living in Maningrida.

Understandings of community development are social constructs that are created by dominant ideologies within a particular context (Rogers 2001). By dominant ideologies I am referring to groups of people united by their access to power. Escobar (1995), for example, argues that powerlessness, passivity, poverty and ignorance are embedded in First World

constructions of an underdeveloped Third World. Likewise, different models of literacy are associated with different constructions of development. Functional literacy, for example, was linked to the developing technological world in post war industrial countries. Without the skills of reading and writing, from a functional literacy perspective, the Third World would remain ignorant of these developments.

Recently, however, the link between literacy and development has been problematised in the changing concept of work. Kalantanzis and Cope (2000) argue that the purpose of education is to accommodate the changing patterns of work. Work, in their view, refers to 'any socially purposeful task', paid or unpaid (p. 125). They also claim that there is 'virtually no future in anything other than paid work' (p. 125). The link between education and a particular construction of development is apparent when they suggest that anything other than paid work is marginalised 'underdevelopment' (Kalantanzis & Cope 2000, p.125-126). Labelling alternatives to paid work as underdevelopment has implications for literacy programs of some minority Indigenous language speakers who may reject the dominant developmental paradigms. The literacy practices examined in this study may be concerned with promoting opportunities for the children to explore new uses for Ndjébbana. Instead of associating literacy with work, the Kunibídji children's purpose for engaging in the literacy events of this study may be linked to a respect for their own language and knowledge systems. If so, a link between literacy and community development may emerge as a the literacy practices with Ndjébbana texts are explored.

An understanding of the different approaches to development highlights the variety of purposes for literacy in different contexts. Three different approaches to development have been presented by Rogers (2001). The first approach is to frame development as a defence against colonisation in order to secure a community's self-determination. As an example of the this form of development, Aikman (2000, p.116), in an examination of the Harakmbut attitudes to literacy in Peruvian Amazonia, suggests the Harakmbut are pursuing a self development objective 'that will strengthen their way of life through protection of traditional territory and the rejuvenation of their diversity of economic activities'. Any literacy events involving Ndjébbana texts will be examined for the Kunibídji's understanding of self-determination that defend their nation from colonisation by other groups of Indigenous and non-Indigenous people.

The second approach to development, noted by the Rogers (2001, p.215), are those community developments that are alternative to the 'Western framework of progress and degeneration'. Some literacy projects pursue alternative developmental agendas to those of state, international and capitalist developments. Literacy may be used for communal uses instead of providing entries into capitalist and free market economies. Framing Ndjébbana print literacy as part of the Kunibídji's developmental agenda that is alternate to the agendas embedded in English literacy may be useful in this study. As 'there was never a Fordist work order' (Street 2001, p.3) in any stage of the Kunibídji's history, it would appear natural for the participants in this study to relate literacy to a developmental agenda that matches their own history. There is an expectation in this study that the literacy practices which emerge from the literacy events with Ndjébbana texts will reflect an alternative conceptualisation of

development to that associated with the 'universal economic paradigms and workplace relations in post-industrialised, complex societies' (Newfield & Stein 2000, p.300).

The third approach to development identified by Rogers (2001, p.216) is a pragmatic approach in which the local participants select the useful features of the dominant development program while rejecting the remainder of the package. Altman (1987) has provided an example of a pragmatic approach to community development by a group of Indigenous Australians in the context of changing dominant developmental practices. He suggested that the eastern Kuniwinku living near Maningrida were hunting and gathering in the welfare state (Altman 1987). Any engagement with Ndjébbana texts demonstrated by Kunibídji children may reflect their pragmatic adoption of elements of Ndjébbana print literacy to suit aspects of their own understandings of community development.

The notion of development that is embedded in promoting literacy often remains implicit throughout many programs. An attempt will be made to link the literacy practices identified in this study to the participants understandings of development. Such links will go a long way towards explaining why Kunibídji adults and children are enthusiastic about adopting Ndjébbana print literacy.

As I have mentioned earlier, the interactions of Kunibídji children as they engage with Ndjébbana texts will hopefully do no harm to the children and may lead to a humanising praxis amongst the Kunibídji who participate. The success in promoting a humanising praxis amongst the participants could be measured by how closely the identified literacy practices

are aligned to Kunibídji developmental agendas. I am entering this study without any preconceived ideas about the community developmental agendas that will underpin the participants' access to Ndjébbana texts in Kunibídji homes.

The approaches to development are presented as the final contextual layer to be considered in the critical approach to literacy, as represented in Figure 6.

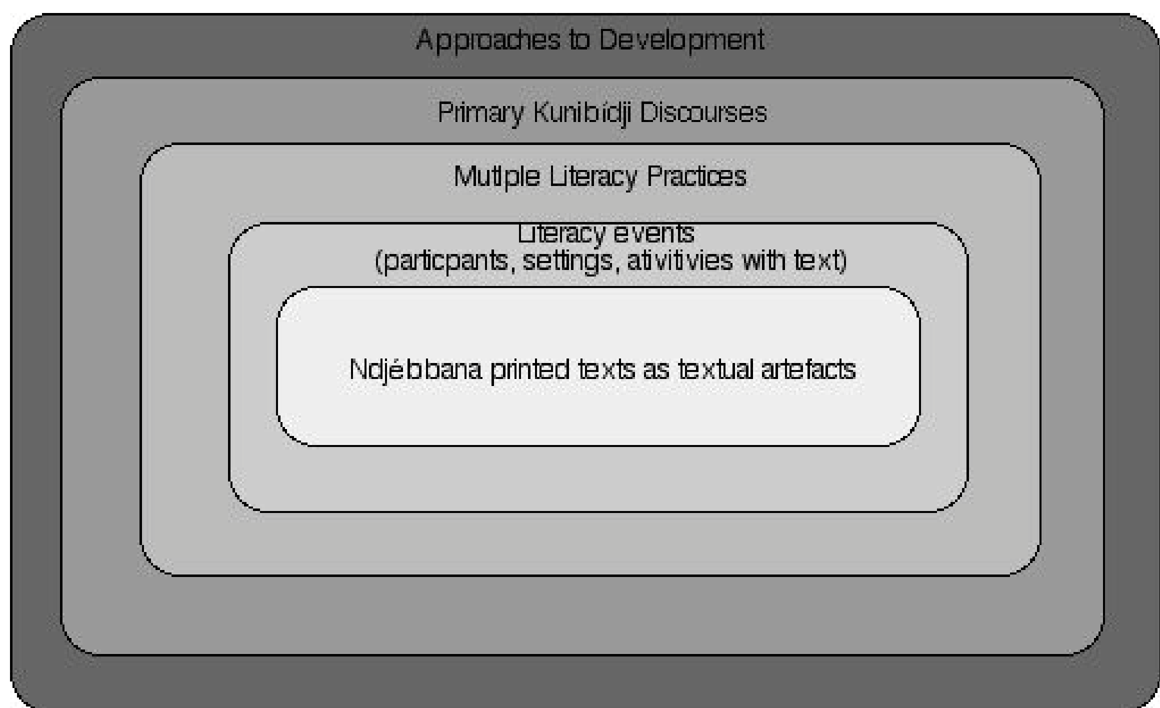

Figure 6. The approaches to development as a contextual layer in literacy.

Limitations with the framework

The is several problems associated with the critical approach to literacy in this study. Some of these problems concern the relativism of the NLS. Other problems with the framework are linked to the NLS methodology.

One problem associated with the framework relates to the bottom up approach to literacy in the NLS. Global interests may challenge the relative nature of local literacy practices that are promoted in the NLS. There is an argument that global discourses are producing a ‘multiplicity of communications channels and media, and the increasing saliency of cultural and linguistic diversity’ (New London Group 1996, p.63). Any attempt to identify the local literacy practices of 150 Indigenous Australians may appear irrelevant in the face of global discourses outlined by the New London Group (1996).

A focus on global discourses, however, may not be the best option for a critical approach to literacy that promotes the Kunibídji children’s acquisition of Ndjébbana. As I have pointed out in the above figures, any literacy program has developmental agendas that are associated with the purposeful engagement with texts. Many of the Discourses associated with learning the new technological literacies at available at school may have entirely different developmental agendas associated with the social practices of literacy to those represented in this study.

Auerbach (1997) suggests the global discourses can be framed as the ‘voices of power’ while local literacy practices can be framed as the ‘power of voices’. Literacy programs that have been associated with voices of power have been operating in Maningrida for more than thirty years. Most Kunibídji children have left school by age fifteen with the literacy levels of a competent seven or eight year old in mainstream Australia (G. Wright, personal communication 27 September 2005). This study seeks to promote the ‘power of voices’

amongst the Kunibídji in providing access to Ndjébbana texts in their own homes. By identifying Kunibídji literacy practices, a comparison between the developmental agendas associated the voices of power and the power of voices may be explored. Without knowing how global discourses may conflict with the Kunibídji literacy practices, the promotion of global discourses amongst the Kunibídji will be limited.

A similar problem that is linked to the relativism of the NLS is the romanticism of literacy practices as they appear to be confined to a particular local context. What sets this study apart from any romanticism of local literacies, however, is the rejection of the status quo of the Kunibídji's political positioning. The intervention that is associated with this study will provide opportunities for Kunibídji to affirm their literacy practices with Ndjébbana texts around their own homes. Kunibídji's political repositioning which is promoted by this study overshadows any associated romantic notion of local literacy practices.

By rejecting the status quo regarding the absence of Ndjébbana texts in Kunibídji homes, this study will not simply describe literacy events that will reproduce Kunibídji inequity regarding their right to speak Ndjébbana. Kostogriz (2002, para 21) suggests, 'literacy events involve not only reproductive but also productive-transformative activities'. Literacy events are not just a transmission of the socio-cultural practices but also provide evidence for the transformation of social practices that tend to be a part of everyday Kunibídji life. The evidence of a critical approach to literacy is provided by the social transformation that is an integral part of the NLS.

There are also problems associated with distinguishing the discrete contextual layers in this framework. Another way of examining this problem is to consider the elements of the social contexts that are spread over several layers. Just as Kristeva (1986) has identified that links between different texts form an intertextuality, the links between the layers in the figures presented in this section form a kind of social intertextuality dependent on the context.

Maybin (1999), for example, suggests that there is an intertextual relationship between texts and literacy practices. The intertextual relations between texts and literacy practices have been discussed by Ormerod and Ivanic (1999, p.96) who suggest that there are 'past and future inferred literacy practices associated with the physical production of texts'. The literacy practices embedded in the Ndjébbana texts of this study may influence the kinds of interactions that take place with the texts and how the texts are positioned by the children as part of their primary Discourse.

Another problem which has been identified with the NLS is that the participants in research studies are often not versed in the discourses that are used to report the studies (Rogers 2001). There are two ways of seeing this problem as it relates to this thesis. The first is that most academics who will read the final thesis are not literate in Kunibídji social practices or the Ndjébbana language. The second, which relates more to Rogers'(2001) argument, is that most Kunibídji are not literate in the academic discourse found in a thesis or academic report. One possible solution that will be explored in the methodology chapter is the integration of the Kunibídji's Ndjébbana voices into the English academic narrative.

The final problem of the NLS that will be considered is the ethnographic relations between the researcher and the participants. I enter this study as a researcher providing opportunities for members of the Kunibídji community to assert their rights about self-determination. My intervention in providing access to texts in the minority Indigenous Australian language of the participants is intended to promote the participants taking charge of their political positioning. While I am involved in the transformative activity of providing Ndjébbana texts around Kunibídji homes, this study seeks to promote the Kunibídji voices that are embedded in their independent interactions with the texts in this context. By attempting to include Kunibídji's voices in this study, I am not speaking for the members of the Kunibídji community but rather collaborating with the Kunibídji in order that their understanding of literacy can be articulated.

Chapter 2 The research question

Introduction

Lankshear and Knobel (2004) have presented a framework that is useful for highlighting the research problems, research questions, research aims and research objectives. In this chapter I intend to present the purpose and the problem of this research to the research question. I will then outline the objectives of this research that are associated with exploring the research question. In the previous chapter, I explained that the first identified problem of this research was the lack of access of Kunibídji children to literacy events with Ndjébbana texts in their homes. I developed a case for Kunibídji children to have access to texts in Ndjébbana as part of their linguistic human rights. Linguistic human rights in education enable the maintenance of diversity in the world (Skutnabb-Kangas 1999). The ideological considerations of Kunibídji children as speakers of a minority Indigenous Australian language and the logistical implications of providing literacy events that are mediated by Ndjébbana in their homes frame the research question in this study.

The research purpose.

The purpose of the research has emerged from the complex Kunibídji social context. In complex social context associated with literacy, the purpose of this study began to revolve around a focus on the linguistic human rights of Kunibídji children with respect to accessing Ndjébbana texts in their homes. Knowing what choices the children would make when texts became available at home would indicate the language and social practices that children valued.

The purpose of this study is to identify the understandings held by members of the Kunibídji community about their right to access Ndjébbana print literacy in their homes. The future of Ndjébbana print literacy as a primary and secondary Discourse can only be understood after attitudes of the Kunibídji community have been presented. These understandings will also inform the appropriate technology associated with Ndjébbana texts.

While there is certain technology associated with the texts in this study, the purpose of the study lies in articulating social and ideological understandings that are embedded in the literacy events of this study. I could have easily been drawn into studying the new technology of the texts and how this may change a social interaction in Kunibídji literacy events with the Ndjébbana texts. While Kunibídji linguistic human rights are in the balance, however, there is a strong justification for excluding an overt focus on technology from the purpose of this study. The way I made sense of the complexity of the social context was to keep an ideological focus rather than a technological focus throughout the study.

The research problem

This research began with the existential problem, as perceived by me, of Kunibídji preschool children beginning school with only very limited exposure to Ndjébbana print literacy. The social practices associated with Ndjébbana print literacy were learned by Kunibídji children at school rather than acquired at home. The research problem began with my perception of an existential problem of the lack of Ndjébbana printed texts in the homes of Kunibídji children.

One way to solve this problem was to provide Ndjébbana texts that Kunibídji children could access around their homes. This form of intervention associated with the study was an attempt by me not only to solve the above problem, but also to promote an awareness amongst members of the Kunibídji community of the possible value in acquiring Ndjébbana print literacy in the children's homes. The intervention associated with this study would provide members of the Kunibídji community with opportunities of extending their understandings of their children's attitudes to Ndjébbana texts at home.

As I had been teaching the Kunibídji for a number of years before I began this research, I saw the research problem from a number of different perspectives. Very rarely were problems in an Indigenous Australian community singular in their nature, and the problem of the lack of printed Ndjébbana resources in Kunibídji homes was no exception. I will explain that the absence of Ndjébbana texts around Kunibídji children's homes simultaneously created an existential, epistemological and ontological problem. The original existential problem, as perceived by me, had ontological and epistemological implications for Kunibídji community members.

Ontologically, the provision of Ndjébbana texts in Kunibídji homes may not be congruent with their social practices. Kunibídji may not want Ndjébbana texts to be a part of their daily life around their homes. There is a pressing need for this research to include Kunibídji ontological understandings of Ndjébbana print literacy in order to justify the benefit or harm posed by the study's intervention. An understanding of how well the Ndjébbana texts fit with the children's ways of seeing is useful knowledge for the teachers

and community members involved in the teaching of literacy in the Ndjébbana two-way program.

Although the Ndjébbana Bilingual and Ndjébbana Two-Way Programs had been operating for some time, the social practices of the Kunibídji children at home had not been identified. Epistemologically, the potential for Kunibídji children to acquire the literacies associated with Ndjébbana texts at home was unknown. The lack of knowledge about Kunibídji practices with Ndjébbana texts at home appeared rather illogical to me. It appeared to me that the millions of dollars spent each year on learning literacy at school may be more effective if some of this money was spent understanding the ways of knowing demonstrated by the children in their first language at home.

There were also practical or logistical problems with the intervention of providing Ndjébbana texts in the homes of Kunibídji children. One of these was that there were limited Ndjébbana texts available for use in this study. So, if the children were to have choices in this study, a range of Ndjébbana texts would have to be created for them to access. Providing the children with access to the texts in an orderly format was also important.

Another logistical problem was that many Kunibídji children cannot read Ndjébbana printed texts. A solution to this problem had to be found in order to present the Ndjébbana texts in a form that was accessible to Kunibídji children who were not able to read. These logistical problems were of secondary concern to the main research problem, which was to examine the

Kunibídji children's interactions around the Ndjébbana texts in an attempt to understand the potential for them acquiring print literacy around their home.

The research question

This study will answer the following question:

What are the literacy practices enacted by Kunibídji children with Ndjébbana texts outside their homes in Maningrida?

There are several features of this research question that I will outline below. The literacy focus of this research is no surprise given the research problems that have been outlined above. There are elements of technology and different knowledge systems in this study, as well as the intervention in providing remote Indigenous Australian children with texts in their language. The context of the study, the intervening practice associated with the study and the use of new technologies are all related by the way Kunibídji children make meaning while reading Ndjébbana texts.

Integral to the research question is an attempt to articulate Kunibídji perspectives on literacy. As I investigate the research question I will be identifying the literacy practices that are demonstrated by Kunibídji children as they interact with texts in their own language around their homes. This research will identify the values and beliefs about Ndjébbana print literacy that have not yet been presented from the Kunibídji nation's perspective. Only by

understanding the literacy practices from a Kunibídji perspective can I hope to provide answers to the research problems that have been outlined in the previous section.

An important point about the research question is the assumed plural nature of Kunibídji literacy practices. I enter this research with an expectation that Kunibídji children will demonstrate multiple literacy practices around the Ndjébbana texts in this study. As a negotiated experience I am prepared for the children to exhibit complementary as well as competing literacy practices with the Ndjébbana texts used in this study.

Another feature of the research question is that Kunibídji literacy practices, like any literacy practices, are enacted. The word 'enacted' suggests Kunibídji literacy practices will be demonstrated in the literacy events that are recorded as part of this study. As every member of the Kunibídji community I have spoken to at home prefers to speak in Ndjébbana, it would appear only natural to identify the enacted literacy practices from literacy events in Ndjébbana. The enacted literacy practices in this study will be identified from the literacy events, language and Discourse that the children prefer to use when reading Ndjébbana texts. By not forcing the children to behave in a certain way or speak English, the enacted literacy events will demonstrate their understandings about the merits of reading Ndjébbana texts. The enacted literacy practices will be a valid reflection of the multiple values and beliefs held by members of the Kunibídji community about the provision of Ndjébbana printed texts in their homes.

The research question related to the above discussion constructs all the Kunibídji as potential participants in this study. While this study will focus on the attitudes of the Kunibídji children to Ndjébbana print literacy in their own homes, I expect that a range of Kunibídji people of different ages will be involved with the Ndjébbana texts due to the parental authorship of some of the texts. The enacted Kunibídji literacy practices will be representative of the participants of the study regardless of the their age. Having stated the above, I am confident the majority of the literacy events around the Ndjébbana texts will involve the Kunibídji children as they generally have more contact with print literacy than adults through their contact with the school.

The research aim

The aim of the research is to understand the potential benefits associated with providing Kunibídji children with Ndjébbana texts in their homes. By exploring the research question, the research aims will also be satisfied. After the literacy practices of Kunibídji children have been articulated, an evaluation can be made concerning the justification for intervening and providing the children with Ndjébbana texts in their homes. While the potential benefits of reading Ndjébbana texts at home remain unknown, decisions about how the literacy resources are distributed in the Ndjébbana Two-way program remain uninformed.

Although the aim of this research may appear rather specific, the findings of the research can be framed at a conceptual level. One of these conceptual aims is to identify the potential for using a bottom up approach to literacy education in a minority Indigenous Australian context.

Another general understanding that could be provided by this research is of the role of print literacy as a primary discourse in a minority Indigenous Australian language. The results of this study can potentially be used to provide some partial understandings of the effectiveness of bottom up approaches to literacy education that may have implications outside Maningrida.

The research objectives

The logistics of the intervention in this study and the theoretical framework can be used to inform the research objectives. These objectives can be presented as a set of practical steps, outlined in the following list.

- Obtain permission from the Kunibídji community to carry out this research
- Design the Ndjébbana texts to be used in this study
- Collaboratively create a variety of Ndjébbana texts for this study
- Identify the best way to distribute these texts around the children's homes
- Record the literacy events around the Ndjébbana texts
- Translate these literacy events into English for analysis
- Articulate the enacted Kunibídji literacy practices from the literacy events
- Present evidence of Kunibídji literacy practices for academic examination and Kunibídji reflection

Conclusion

This research cannot logistically proceed without the creation of the Ndjébbana texts used in the research. Also, the data cannot be analysed without being translated into English. I also am ethically bound to present my findings to the Kunibídji community in a way its members can understand. Thus the findings of the research are encompassed by logistical and ethical concerns that form objectives of this research.

Chapter 3 Methodology

Introduction

Prior to outlining the details of data collection and analysis, I will explain how I maintained a consistent theoretical framework throughout the literature review and the methodology. The critical approach to literacy, which was developed in the literature review, will be complemented by a critical approach to research. My argument is that research participants can be provided with opportunities for political repositioning throughout the research process. A critical approach to research is presented in this chapter with reference to critical social inquiry and critical ethnography. The critical approach to research complements the critical approach to literacy presented in the literature review. I am viewing the research process as well as literacy events in this study as potential sites of empowerment for members of the Kunibídji community.

Embedded in the methodology of this study is my long standing respect for the participants of this study. As this study is largely about improving Kunibídji children's access to written texts in their own language, I found a critical understanding of technology to be a significant component of the methodology. A critical approach to technology had the potential to reposition the participants in relation to the design and use of texts in this study. As part of the methodology I was challenged to take a critical approach to the Ndjébbana texts that were available, and also a critical approach to the text of the thesis. My respect for the participants drove my desire to create texts throughout this study that were accessible to all members of the Kunibídji community.

Outlining the methodology from the theoretical understandings of critical inquiry, with reference to the disciplines of literacy, research and technology, provided a sound basis for presenting the theory that underpinned the research methods of this study. The creation of the tools for this study was an important part of the study's methodology. Another feature of the methodology was the way the problems of data translation from spoken Ndjébbana to written English was tackled as it arose in the study. With reference to the solutions that were found to this problem, as well as to the critical social inquiry that drove the research, the final section of this chapter justifies the presentation of this thesis on a DVD medium.

Epistemology to Methods

In the introductory chapter of this thesis, I presented an account of how my epistemology had changed from an objective to a subjective view of knowledge. A concise and valid methodology will provide explicit links from the epistemology to the data collecting techniques of the research. Crotty (1998) has developed a framework which I will use as a basis for distinguishing and linking the epistemology, theoretical perspective, methodology and methods used in this study.

Identifying the literacy practices of Kunibídji children complements an epistemology of constructivism. According to Crotty (1998, p.143), 'meanings are constructed by human beings as they engage in the world they are interpreting' in constructivism. As a qualitative study, this research involves the 'abstract characteristics of events' (Kincheloe 2003, p.188). In this study the abstract characteristics of literacy events will be presented as the literacy practices enacted by Kunibídji children as they interact with Ndjébbana texts in their homes.

Although there are many ways of interpreting how humans engage with the world, Kunibídji children's engagement with Ndjébbana texts in this study is viewed from the theoretical perspective of critical inquiry. 'Critical inquiry keeps the spotlight on power relationships within society so as to expose the forces of hegemony and injustice' (Crotty 1998, p.157). I have already presented a critical approach to literacy as part of this study's theoretical framework. The theoretical framework of critical inquiry will also inform the methodology of this research by integrating understandings of critical ethnography and critical social inquiry. The logistical considerations of carrying out research in a remote Indigenous Australian community were framed by the critical inquiry that directly influenced elements of the research method, such as data collection procedures. These will be outlined after the methodological understandings of critical social inquiry and critical ethnography have been presented.

Critical Inquiry and qualitative research

The methodology used in this study combines understandings defined from critical ethnography and critical social inquiry. The fundamental assumptions accepted by most researchers using methodology based on critical social inquiry are summarized by Kincheloe and McLaren (1994):

> We are defining a criticalist as a researcher or theorist who attempts to use her or his work as a form of social or cultural criticism and who accepts certain basic assumptions: that all thought is fundamentally mediated by

> power relations that are socially and historically constituted; that facts can never be isolated from the domain of values or removed from some form of ideological inscription; that the relationship between the concept and object and between signifier and signified is never stable or fixed and is often mediated by the social relations of capitalist production and consumption; that language is central to the formation of subjectivity, that is both conscious and unconscious awareness; that certain groups in any society are privileged over others and, although the reasons for this privileging may vary widely, the oppression that characterizes contemporary societies is most forcefully reproduced when subordinates accept their social status as natural, necessary, or inevitable; that oppression has many faces and that focusing on only one at the expense of others can be counterproductive because of the interconnections among them; that mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression (pp. 139-140).

The above definition aligns the methodology of research with a theoretical framework of critical inquiry in a couple of ways. First, research is presented as a vehicle to challenge the systemic reproduction of domination of privileged researchers over oppressed participants. Semali and Kincheloe (1999) claim that the diverse Indigenous groups from all parts of the world share a commonality of being dominated by non-Indigenous peoples. This common form of domination is particularly relevant to this study as the participants are speakers of a minority Indigenous Australian language. My intervention of providing Ndjébbana texts to

Kunibídji children in their first language is a demonstration of my struggle to challenge the power relations between myself as a researcher and Kunibídji children as the participants. The design of the Ndjébbana texts did not so much reflect my history with printed texts as the participants' history with printed Ndjébbana. The texts used in this study were designed to make previously produced Ndjébbana texts more accessible to members of the Kunibídji community who could not read printed Ndjébbana. Through access to these texts, members of the community will have opportunities to explore the social relevance of participating in literacy events and the critical enquiry these events offer the participants.

Second, Kincheloe and McLaren's (1994) definition implies that critical enquiry will challenge the 'presuppositions that inform the normalisation judgements one makes as a researcher' (Kincheloe & McLaren 2002, p.117). Through my years of daily contact with Kunibídji community members, I have been forced to challenge some of my presuppositions about their social practice that I initially brought to Maningrida. As a teacher, I have attempted to challenge the normalisation of Kunibídji children's social positioning with reference to their school engagement and attendance, as I discussed in the introductory chapter of this thesis. As a researcher, I am attempting to challenge the normal judgements about Kunibídji children's engagement with texts in their own homes that have been made by the school as a secondary institution.

The methodological understandings that I have derived from critical social inquiry are complemented by critical ethnography, which 'does not just describe research, it uses research to redefine social theory' (Carspeckan 1996, p.3). Foley (2002) suggests that critical

ethnographers use theory to disrupt reality instead of mapping it. Critical ethnography, Carspeckan (1996) argues that the findings of any ethnographic inquiry should be used to conduct a systemic analysis of the participants' political positioning. Such analysis would have merit in this study, as it would potentially identify some of the reasons why Maningrida school should support literacy events in the Kunibídji children's homes.

Identifying the social practices of literacy demonstrated by Kunibídji children is an important research objective of this study. Before this study began, Kunibídji children had limited choices in relation to access of written texts in their own language. The only viable access they have to Ndjébbana texts is at school. This study seeks to extend the choices of the children in relation to Ndjébbana texts. By providing access to texts in their first language, this study seeks to provide opportunities for the children to reposition their understandings of the role Ndjébbana texts may play at home. Principles of critical ethnography, together with critical social inquiry, are integral in this study to identify the literacy practices of Kunibídji children.

Respecting the participants

While the epistemological and ideological understandings of critical social inquiry and critical ethnography are important methodological features of this study, the ontological understandings of the participants are also important. Although I am a non-Indigenous Australian researcher, after living closely with members of the Kunibídji community for a number of years, I have grown to respect the members of the Kunibídji community and the

struggles they face on a daily basis. I believe I have been able to gain some limited understanding of their struggles.

Smith (1999, p120) suggests that all sound participatory research practice should be based on a sense of 'respect'. My intervention of providing Kunibídji children with access to Ndjébbana texts at home is based on my respect for the participants in this study. Kunibídji children have the same linguistic human rights as speakers of majority languages. Many speakers of majority languages take for granted their access to texts in their first language on new technologies at home. My respect for the linguistic human rights of Kunibídji children underpins the methodology of this study. This respect is closely linked to my own understandings of principles of self determination, in which participant choice is promoted.

Respect for the participants of any study is also related to the power that may be imparted to the participants through the research process. Ivanitz (1999) suggests participatory research lies between token involvement and power sharing, and the more respect, the more power sharing. The understandings of critical inquiry in the field of research cannot be divorced from the ethic of respect for the participants if the study is to have any real hope of challenging the political positioning of the participants.

When I gained permission from Kunibídji community members to carry out this research, their responses tended to demonstrate the collaborative respect we had developed over time for each other. As I had lived in the community for years before this research began, gaining permission from members of the Kunibídji community to conduct this research was based on

my past performance as teacher. There seemed to be a consensus amongst the parents that providing Ndjébbana texts on computers in their homes would be a useful thing to do. Although I attempted to explain how I would present texts to the children and record their interactions with the texts, the discussion seemed a bit abstract to members of the Kunibídji community at the time of getting permission. The details of exactly where and when the children would access the texts was to be finalised after I had produced the texts and they had been viewed by the parents. An important feature of the methodology of this study was that I consistently sought permission of the parents so that ongoing informed decisions were being made as the parents became aware of various aspects of the project. The methodology of this study reflected the fact that building community awareness about this research was an ongoing process. In effect, the research was intended to provide new understandings for both Indigenous and non-Indigenous people, and a collaborative research process between non-Indigenous researcher and Indigenous participants would guide the direction of the research. I was seeking permission from members of the Kunibídji community to enter into collaborative research arrangements that respected their ways of being while generating new understandings about literacy in a minority Indigenous Australian language context.

My respect for the participants motivated what I was doing in the research. As the participants were marginalised speakers of a minority Indigenous Australian language, I was valuing their social practices of literacy as a key element of Kunibídji pedagogy. As this study emerged I realised my respect for the participants was also demonstrated in the way I was conducting the research. The production of the texts used in the study, the data collection procedures, and the data translation process provided a multiplicity of opportunities where

my respect for the participants could be exemplified. Thus, my respect for the participants mediated the means and ends of this research. Barta (2002) suggests that similar understandings of means and ends need to negotiated by teachers of Indigenous students. Progress in Indigenous Education will be made 'when educators realise that how they teach Native students is just as important as what they teach' (Barta 2002, p.78). As a non-Indigenous teacher of Indigenous Australian students, I was aware that how I conducted the research with Kunibídji children was just as important as the publications that would emerge.

My respect for the participants in this study is demonstrated also by my attempt to ensure that the study would deliver benefits for members of the Kunibídji community. A related way of framing a critical approach to research is to ensure that it will 'maximise opportunity for benefit' (Smith 1997). The intervention associated with this study will benefit members of the Kunibídji community in a variety of ways. Kunibídji parents will have opportunities to judge for themselves the potential benefits of their children partaking in literacy events with Ndjébbana texts as part of their everyday social practices. The literacy practices that are identified in this study when the participants are provided with independent access to texts can be compared to the literacy practices embedded in the institutional Discourse of the school. The benefit to the participants is that the aspects of texts that promote their engagement will be identified and can be used in the classrooms at the school. With reference to the theory of critical inquiry, the research will also benefit teachers and administrators who wish to integrate the voices of their Kunibídji students at school. The research will benefit the teachers and administrators of Kunibídji children by proposing ways that the school could systemically change to incorporate the literacy practices of Kunibídji children. As a research

method, a critical approach to research has the capacity to benefit the participants and those associated with the formal education of the participants.

Although I entered this study with a critical approach to research, I immediately began searching for ways to solve the logistical problem of providing texts for the children in their homes. The technology embedded in the delivery of these texts was to become a recurring theme in the research. For this reason, I will outline the theoretical approach I have taken to texts in this study.

Approaches to technology

Mentioned in the research question was one of the first logistical problems I would need to solve in order to carry out this research; namely, the creation of Ndjébbana texts in accessible format for Kunibídji children. The creation of Ndjébbana texts can be considered to be a part of the research methodology because texts form the tools of this research. I have included discussion of these texts here since different approaches to technology can be used to inform the creation of these texts. Of these approaches, the critical approach to technology is useful in justifying the kinds of Ndjébbana texts that were created as the tools of this study, and for justifying the medium in which this thesis is presented. The critical approach to technology outlined here is another example of how the research method is linked to the theoretical framework of the study. This section outlines several different approaches to technology, all of which are socially constructed. Examples of how texts have been socially constructed using various approaches to technology will be provided in this section.

An instrumental approach to technology views all tools as ‘neutral’ without valuative content of their own (Feenberg 1991). Technology, as seen from this instrumental perspective, appears to be transferable across different social contexts. In an instrumental approach to technology, printed texts would be framed as neutral artefacts. When access to Ndjébbana texts was first provided to Kunibídji children by the Ndjébbana bilingual program over 25 years ago, the proponents of the program appeared to be taking an instrumental approach to technology.

However, I am taking the view in this study that Ndjébbana printed texts are not neutral. This study highlights the need to identify whose ideology is promoted in the form or technology of a text. Bowers (1988), although writing before the Internet was widely available in the western world, suggested that the use of technology is culturally dependent. He cites the example of how education computing empowers people for the information age. The non-neutrality of technology encourages some reflection on the form the Ndjébbana texts should take since the borrowing of technology from another culture ‘should involve a careful assessment of the original host culture’ (Bowers 1988, p.127). Ndjébbana texts in printed books are not a neutral technology because the majority of Kunibídji cannot read them and are therefore excluded from accessing their narratives. The form of the Ndjébbana texts needed to be rethought for the purposes of this study in order to make their content more accessible to the majority of Kunibídji who are not print literate.

Another approach to technology that is found in many approaches to literacy is one of technological determinism. A deterministic or substantive theory of technology suggests that

the social world is being restructured as an object of technological control that constitutes a new cultural system (Heidegger 1977). According to Ellul (1964) a deterministic approach to technology continues to subjugate our humanity and determines how we behave. Supporters of a deterministic approach to technology often overlook the complex social environment that frames the access and use of technology by people.

A good example of a deterministic approach to technology with reference to texts is Street's (1995) autonomous model of literacy. According to this approach, people are subjugated to the skills of decoding and coding texts, which is seen as literacy. The consequence of such an approach to texts is that poor and marginalised people tend to be blamed for their own exclusion from the skills of literacy (Auerbach 1997). A substantive approach to technology with reference to texts fails to account for the diversity of effects and consequences of technology across different contexts. Luke (2000) suggests that an autonomous model of literacy is associated with a belief that the effects or consequences of technology are similar across all contexts.

In taking a bottom up approach to literacy, I take the view that Kunibídji children were very unlikely to be marginalised in this study because they were provided with opportunities to acquire Ndjébbana texts in their homes. By outlining Kunibídji children's literacy practices that were enacted with these texts, I am attempting to provide some insights that may be useful to Kunibídji people and also in other contexts. In this study I am challenging the notion of taking a deterministic attitude to Ndjébbana texts and their associated literacies.

In rejecting a deterministic approach to technology, I am attempting to identify how the construction of Ndjébbana literacy, mediated by digital texts, is a negotiated process in a Kunibídji home environment. I wanted to explore the possibilities of presenting the Ndjébbana texts on new technologies so the texts would be more interesting for the children to read. Such a challenge led me to adopt a critical approach to technology in relation to the texts used in this research. The critical approach to technology is useful in developing a design for the Ndjébbana texts which will extend the current opportunities that Kunibídji children have to access these texts.

A critical approach to technology

The technology embedded in the Ndjébbana texts in this research had to be considered in relation to the antidemocratic values that are typically linked with the development of texts. Feenberg (2002, p.3) has suggested that the 'degradation of labour, education and the environment is rooted not in technology per se but in the antidemocratic values that govern technological development'. An important feature of the use of the Ndjébbana texts in this study was my attempt to integrate democratic values into their design. I introduced new forms of technology in ways that I thought members of the Kunibídji community would appreciate. A critical approach to technology highlights 'the social values placed on the design, not just use, of technological systems' (Feenberg 2002, p.14). I attempted to integrate my understandings of Kunibídji ways of being, Kunibídji social practices, and the multiple ways Ndjébbana has been represented using different technologies.

Feenberg's critical theory of technology establishes three principle points:

> (1) technological design is socially relative, contrary to deterministic arguments or theories of technical neutrality; (2) the unequal distribution of social influence over technological design contributes to social injustice and (3) there are at least some instances in which public involvement in the design of devices and systems has made a difference (Feenberg 1995, p.3).

These principles were useful in designing accessible tools for this research. Integral in their accessibility was a design that accommodated what I understood to be Kunibídji social practices as well as Kunibídji textual practices. Many Kunibídji cannot read printed Ndjébbana so the form of the texts needed to be reworked to make the content accessible. The texts were designed so that Kunibídji children could access the content independently of a teacher, Indigenous Australian Education Worker or parent who could read Ndjébbana printed texts. Complementing the accessibility in the design of the Ndjébbana texts was the inclusiveness of Kunibídji social practices. The design was kept fairly simple so lots of texts could be constructed with members of the Kunibídji community who cared to contribute. All Kunibídji can speak Ndjébbana, so the design including an oral Ndjébbana reading of the printed Ndjébbana texts was incorporated.

The critical approach to technology mediated the design, production and distribution of the texts used in this study. The next section of the methodology examines each of these elements of the tools of this research.

Designing the Ndjébbana texts

Design is about the best means of employing 'available resources in a complex ensemble' (Kress 2000b, p.157). This section discusses the design of the Ndjébbana texts with reference to the available resources. Before discussing the available resources that could be incorporated into the design of the texts of this study, I would like to comment on the unavailability of some resources that indirectly influenced the design of the texts. This is followed by an account of the resources that were available for the design of the Ndjébbana texts used in this study. Because this study takes a critical approach to technology, there is also a discussion on why some available resources were not used in this study. The final section examines some of the characteristics of the Ndjébbana texts that made them accessible to Kunibídji children.

The resources available in the design of the Ndjébbana texts were limited in several ways. First, the Ndjébbana Two-Way Learning Program had only limited funding from the Northern Territory Department of Education. There was very little capacity for the program to offer innovative changes as the program was on such a tight budget. This is important as new technologies cost money and if money is not provided participant access to innovative programs with new technologies will be limited. The design of the texts in this study might have been different if funding from within the education department had been provided for the research.

The design of the texts was also limited by successive principals adopting a status quo approach to the Bilingual and Two-Way learning programs operating at the school. The

design of the texts reflected the limited change that was being promoted at a school level in the Ndjébbana Two-Way Learning Program during the life of the study. I considered that the status quo of the Ndjébbana Two-Way Learning Program needed to be challenged as it was contributing to the systemic marginalisation of the literacies the program was supporting. Hence, some teachers in the school believed that promoting innovative designs of Ndjébbana texts that Kunibídji children would access at home was a waste of time. Had there been a history of support for innovative changes to the Ndjébbana Two-Way Learning Program, teachers would consider the designs of the texts used in this study as a natural progression aimed at extending educational opportunity for Kunibídji children.

A third limitation in the design of the texts related to Kunibídji's limited capacity to make a large number of new Ndjébbana texts for the purposes of this study. There have been approximately 250 different titles of Ndjébbana texts produced over 25 years by literacy workers and teachers in collaboration with Kunibídji community members and students as part of the Ndjébbana Bilingual and Two-Way learning programs. There are pressures placed on print literate Kunibídji adults to perform a myriad of duties and roles for a variety of people and programs using their talents. This has led to only a trickle of new Ndjébbana texts being produced each year.

Given the above, I was determined to investigate the literacy practices of Kunibídji children in literacy events with Ndjébbana texts. After all, many of these children were not aware of the limited funding or support for the Ndjébbana Two-Way Learning Program. On the other hand, I had to take a pragmatic approach to the design of the Ndjébbana texts. Over the

period of this study, it would have been impractical to expect that a large number of new texts could be created. Logistically, the production of large numbers of new texts was not an option. The focus of this study was on the literacy events constructed with the finished texts rather than the process of text production.

Having outlined the limited availability of resources that influenced the design of the texts in this study, the available resources in the designs of the texts need to be outlined. First, the previously produced Ndjébbana printed texts were available. While I knew many Kunibídji children would not be able to read these books, and that I could probably not get permission to use them in the community anyway, the stories contained in these texts were useful for this study. The form of the narratives needed reworking as many Kunibídji children could not read them in their current form.

I also considered oral readings of Ndjébbana texts by Kunibídji community members as another available resource in this research. An oral component in the text design would improve the accessibility of the texts to Kunibídji children who may not be able to read the Ndjébbana printed texts. In order that the older texts could be presented in new ways with sound, their design took a multimodal form.

A multimodal text, according to Kress (2000a, p.184), is one that is 'constituted by a number of modes of representation'. A mode refers to the 'semiotically articulated means of representation and communication' (Kress 2000a, p.185). While the existing Ndjébbana printed books were represented by the two modes of printed text and pictures, there were also

other factors that made these texts multimodal. There is modality attached to the age, gender and status of the person who wrote the text. The physical characteristic of the text, such as the age and condition of the book provide another set of modalities associated with the text.

Multimodality was a useful concept to employ in order to improve the design of the Ndjébbana printed texts. So the mode of sound became the second available resource in the design of the Ndjébbana texts used in this study. Recordings of members of the Kunibídji community reading old and new Ndjébbana texts were a new mode that would be added to the texts in this study.

The third available resource in the design of the texts used in this study was the way of combining the modes of printed text, sound and pictures in the one form of text. Powerpoint presentations, for example, had the potential of combining these three modes in the one text. However, I chose digital talking books as the most useful design of the texts in this study. Digital talking books simultaneously represent pictures, text and sound for each page of the book. There are buttons to move between the pages. As each page is opened, the text is read.

I considered that there were several reasons for using digital talking books rather than Powerpoint texts. Firstly, digital talking books had the capacity to highlight the text as it was read. Second, the digital talking books were able to record on the computer the time, book and page of the books that the children read. Finally, the digital talking books could be designed in a framework so that new talking books could be easily added.

The third available resource in the design of the Ndjébbana texts used in this study was their multimodality. Whilst I was using the available narratives as the content of the Ndjébbana texts, I investigated the possibility of borrowing an available multimodal design. There was no need to create a new textual design that integrated these three modes of print, sounds and pictures. It already existed. The words in the text are highlighted as a voice reads the text.

Ndjébbana talking books combined the printed text and pictures of previously produced Ndjébbana texts with the new sound recordings of each page being read. Ndjébbana talking books are 'a particular way of combining semiotic modes' (Kress and Van Leeuwan 2001, p.21) so Kunibídji children who could not read printed Ndjébbana texts were provided with opportunities to decode the narrative.

So the design of Ndjébbana talking books was associated with opportunities for Kunibídji children to access Ndjébbana texts. The purpose of combining semiotic modes of representation was closely tied to a critical approach to technology. Previously produced Ndjébbana texts were transformed into Ndjébbana talking books, incorporating the voices of members of the Kunibídji community reading the texts. The design of the texts made them appropriate for Kunibídji children to access at home, independently of adults or peers who could read printed Ndjébbana.

The design of the Ndjébbana talking books also provided opportunities for a range of community members to contribute to the texts. Obviously the contributions of previously

produced Ndjébbana texts were integrated into the reproduced Ndjébbana talking books. Collaborations during the production of the Ndjébbana talking books enabled the inclusion of many members of the Kunibídji community who were not necessarily Ndjébbana print literate. Although some community members were unable to read print, they could still contribute. Collaborative recordings took place where pages were read by a literate person then repeated by the community member who could not read. As a result members of the community who could not read provided the sound for some of the Ndjébbana talking books. Members of the Kunibídji community who were well respected by the children but unable to read printed Ndjébbana were able to read stories back to the children when they accessed them at home. So the design of the Ndjébbana talking books accommodated the strong oral practices and collaborative relationships of the Kunibídji community.

The digital format of the Ndjébbana talking books provided many possibilities for interactivity between the texts and Kunibídji children. A pilot study was undertaken to investigate the kinds of interactivity that Kunibídji children found most interesting with the Ndjébbana talking books (Auld 1996). The optimal design of the Ndjébbana talking books, based on a quantitative study, was found to be rather simple, with each page of the text represented simultaneously by print, sound and pictures (Auld 1996). At the start of this current study, many Kunibídji children were already familiar with the design of the Ndjébbana talking books from the pilot study (Auld 1996) and from the use of interactive talking books on English CD's available on the computers at school.

An important feature of the above design of the Ndjébbana talking books was that I was only using a small proportion of the computer's capacity to run the Ndjébbana talking books. The Ndjébbana talking books were a relatively simple design. Wyatt (1988, p.86) suggests there needs to be a match with 'the computer's capabilities and the demands of the language pedagogy'. In this study the social possibilities of digital text production in a remote Indigenous Australian community in a minority Indigenous Australian language dictated which capabilities of computers would be used in the study. The simple design of the Ndjébbana talking books meant that relatively large numbers could be produced for this study to provide greater choices for Kunibídji children.

The simple nature of the Ndjébbana talking books meant that some literacies were not included in their design. A useful way of outlining the possible literacies that could have been included in the tools of this study is to identify the changing nature of technology associated with these literacies.

Bruce (1998) suggested that literacy in relation to technologies has developed over time in the following stages:

➔Primitive symbol systems

➔Complex oral language

➔Manuscript literacy

➔Print literacy

➔Video literacy

➔Digital/multimedia /hypertext literacy

➔Virtual reality

The literacies embedded in the design of the Ndjébbana talking books did not include literacies associated with virtual reality or hypertext literacies for example. The point to make here is that the Ndjébbana talking books could be seen as integrating only a limited subset of oral/aural, print and digital literacies in their design. These literacies were integrated by presenting the Ndjébbana talking books in a multimedia format.

The selective inclusion of the literacies associated with the design of the Ndjébbana talking books was justified due to the past experiences Kunibídji children had with Ndjébbana texts. This study was about promoting access to Ndjébbana texts by Kunibídji children. Therefore, the use of designs and content that were familiar to Kunibídji children was completely justified in the texts of this study. The Ndjébbana talking books retained a familiar printed form that many of the Kunibídji community recognised as something they had created.

Kunibídji community members who had previously contributed to the production of Ndjébbana texts could recognise their contribution to this study. The Ndjébbana talking books retained the same pictures and texts as the existing printed Ndjébbana books. The relatively simple design of the Ndjébbana talking books meant that the content of the older texts was decoded for the community to access. So the importance of selecting available literacies in the design of the Ndjébbana talking books was that members of the Kunibídji community were not faced with another form of coding of Ndjébbana texts that might have denied them access to the meaning of the texts. The limited links in the texts in the form of buttons meant that members of the Kunibídji community would quickly acquire the navigational layout of the Ndjébbana talking books.

When Levy (1997a, p.xi) argues against being 'led purely by the capabilities of the latest technical innovation', the warning applies just as much to the stages of technological literacies outlined by Bruce (1998). This warning from Levy came from within the context of computer assisted language learning (CALL) but it also applies to technological innovations in this study. Taking a critical approach to technology and a focus on Kunibídji social influence, the tools of this research were not led by the latest technological advances associated with texts. The concept of simple talking books had been around for the best part of ten years before the study began.

My justification for not using the internet in this study is based on Levy's (1997b) suggestion that the tool should match the task it is meant to support. There are at least two major tasks that the tools had to match in this study. The first was to provide the most effective access to

the Ndjébbana talking books for Kunibídji children at home. The use of any software that required an online connection would have been inappropriate, as the file size of each talking book had to be relatively small. Besides the issue of file size, very few houses in Maningrida have telephones connected. There were constant issues of accounts with phone companies not being paid resulting in telephones being disconnected. This was not an area I wanted to get involved with in this study. Secondly, displaying the Ndjébbana talking books in a multimedia application rather than an internet browser meant the interface of the computer was totally in Ndjébbana. There were no menus or icons in English in the interface of the Ndjébbana talking books. When the computer started up it began to display the Ndjébbana talking books automatically without the children clicking on an icon. The absence of multiple languages in the Ndjébbana talking books reflects the value placed on the children's first language in this study. For the first time, the computer was used exclusively to mediate Ndjébbana in the absence of any English software that was visible to the participants.

This is not to say Indigenous languages cannot be supported through the Internet. Warschauer and Donaghy (1997) documented the use of a bulletin board system which provided meaningful language interaction between speakers of an Indigenous language who reside in a number of islands in Hawaii. As the majority of Indigenous people are multilingual (Skutnabb-Kangas 2000) it is not surprising that Nathan (2000) has been able to document Indigenous Australians using the internet for a variety purposes. The understandings provided by multiple literacies proved to be a useful model to explore the multiple ways in which the computer can be used to support a multilingual language context.

In this study, however, Ndjébbana texts were designed to support a specific set of Ndjébbana literacies that were best accessed by Kunibídji children in an off-line environment.

The on-line use of the computer can be seen to provide computer mediated communication (CMC) that ‘allows users to share not only brief messages, but also lengthy documents’ (Warschauer 1996, p.11). I have no doubt that the design of CMC has some application to at least some of the literacy practices of Kunibídji children. Jordan (2000), for example, has noted how the internet has been used as a promotional tool for the selling of art created in Maningrida. At least some Kunibídji had negotiated the design of CMC as a way of extending their social influence over the art they had created. The literacy practices that I was researching were not best supported by CMC, as the role of the computer was to mediate the Ndjébbana texts in the most accessible manner with the available resources.

I will conclude this section on design by examining the characteristics of the design of the Ndjébbana talking books. The concept of ‘affordances’ is useful in this discussion. The affordances of an object relate to the characteristics that make it obvious how it is to be used (Norman 1988). The affordances of an object are not properties of the object as such but the relationships that people have with the object (Norman 1998). Different texts, for example, may be read by different people in different ways, depending on how useful people perceive those texts to be. The Ndjébbana talking books decoded printed text, amplified the intertextuality of print, sound and pictures, and promoted literacy events where social participation of reading was the norm.

Ndjébbana talking books promote an affordance of meaning making through facilitating interaction with the texts. I would argue that this affordance of interaction with the text is better transmitted through a talking book than a printed book due to the text being read aloud to the majority of children who cannot read print text. Another feature of this affordance is that the sound is linked to a visual decoding of the text, word by word, as the text of each page is spoken. This decoding distinguishes the design of the digital Ndjébbana talking books from the printed Ndjébbana texts, and is important not only in promoting access to the meaning of the text, but also in unlocking how texts are coded.

As another affordance, Ndjébbana talking books amplify the continuum between oral and printed modes of representation. Technology has been demonstrated to both amplify and reduce different modes of communication (Ihde 1979). Printed Ndjébbana books, for example, amplified the mode of print. The Ndjébbana talking books, on the other hand, integrate oral and printed narratives of the same text in a complementary form. This is important as the technology embedded in the Ndjébbana talking books amplifies the same kinds of representations that Heath (1982) identified in literacy events. According to Heath (1982), the interactions with the texts rely on an integration of oral and printed narratives.

Technology also amplifies different kinds of interactions (Warschauer 2002). By simultaneously presenting an oral and printed mode of representation, the Ndjébbana talking books amplify the contextual local identities that are a natural part of Kunibídji social practice. The design of the Ndjébbana talking books amplifies Kunibídji children's access to

texts in their own language. An expected affordance of the Ndjébbana talking books was that Kunibídji children would choose to partake in the literacy events with these texts.

Conversely, Mülhäusler (1990) has warned against reducing languages to writings. Mülhäusler (1990), writing about Pacific languages, warns about legitimatising print through a process of linguistic colonisation so the books afford a reduced mode of communication. One of the advantages of the design of the Ndjébbana talking books is that the printed text is linked with an oral sound channel. Oracy in the Ndjébbana talking books is used as a way of verifying the printed texts. Ndjébbana oracy, in the case of the tools of this research, validates the printed word. The multimodality of the Ndjébbana talking books integrates printed text with other modes of communication in an attempt to extend the printed Ndjébbana text. The reduction of Ndjébbana to writing is constantly challenged by the design of the Ndjébbana talking books that affords an aural interaction with the text by speakers of Ndjébbana.

Ndjébbana talking books also afford a high degree of intertextuality between the modes of textual representation for each page as well as between each narrative. Fairclough (1992) suggests that intertextuality entails an emphasis on the heterogeneity of texts. While there is a heterogeneity of intertextual content between the different narratives found in the Ndjébbana talking books, there is a homogeneity of form between every page of each book. Each page presents the same modes of pictures, sounds and texts in a similar way in order to provide a consistent textual form for the beginning readers in this study. The children can jump between the texts at any time while still remaining in the same homogeneous form of each

talking book. As this is a feature of every page of every text, by design, the Ndjébbana talking books accommodate beginning readers.

I suggest that in simultaneously presenting the heterogeneous and homogeneous forms of intertextuality, the tools of this research were designed to reflect the needs of Kunibídji children who would be accessing the texts independently of adults in this study. Fleer (1987) and Henderson (1993a) suggest that there is an urgent need to create culturally appropriate software for Indigenous Australian students. According to Folds (1986), culturally appropriate software engages groups of people and encourages active participation between members. The design of the Ndjébbana talking books reflects the need to create culturally appropriate software for Kunibídji children that they can access in their homes. This study provided the Kunibídji children with the opportunities to decide how culturally appropriate the Ndjébbana talking books were to their everyday social practices. Providing the children with a consistent form of culturally appropriate software, together with a variety of content in the Ndjébbana talking books, was integral to the affordances of the tools of this research.

The affordances behind the Ndjébbana talking books highlight the intertextuality possible in a digital medium. The Ndjébbana talking books are organised so that Kunibídji children can move between the pages of a narrative or move between a series of buttons by which each narrative can be accessed. The children may jump between narratives, genres, authors and readers as they move between texts simply by clicking a couple of buttons. Compared to the printed Ndjébbana books, the Ndjébbana talking books are consistently organised using a multimedia interface. The intertextuality among the titles is supported as the continued access

to the Ndjébbana talking books does not affect the way they are organised. One of the features of the digital representation of the Ndjébbana talking books is that they will remain organised regardless of how often they are accessed. Unlike printed books the Ndjébbana talking books, remain catalogued while they are read and do not deteriorate through constant reading. The digital form of the Ndjébbana talking books affords an intertextuality that is not available with printed Ndjébbana texts.

Another affordance promoted by the Ndjébbana talking books is the control that Kunibídji children have over the Ndjébbana talking books. The control that Indigenous Australian students have over the computer has been documented as a reason for their enjoyment of using computers (Darvall 1986, O'Donoghue 1992). A similar level of control over the computer in this study made accessing the texts an enjoyable experience for the participants.

So the fourth available affordance was the Ndjébbana talking books. Although only a handful had been previously made before this study, some Kunibídji children had experience in interacting with their design. I saw this awareness amongst the participants as a vital piece of community knowledge that could make the independent distribution of many Ndjébbana talking books to many Kunibídji children a reality.

Before moving on to the production of the Ndjébbana talking books, the final design feature worth noting is the capacity of the texts to trace the children's interactions with the computer. I had previously considered the computer useful in recording interactions while simultaneously presenting stories to the children (Auld 1996) and thought a similar approach

would be useful to this research. Each time a page of a book was opened, the computer recorded the time, the name of the book and the page number. Embedded in the design of the Ndjébbana talking books was a way of invisibly collecting quantitative data while visibly presenting the stories to the children.

When Kress (2000b) identifies good design as the best means of employing available resources, the complexity of the ensemble may be associated more with the social context of the participants than with the technological possibilities of the text. The above discussion highlights how the design of the tools of this research was sympathetic to the social needs of Kunibídji children. The New London Group (1996) have introduced the concept of designs of meaning when attempting to conceptualise the designs embedded in the changing social and technological context associated with literacy. Integrating Kunibídji designs of meaning into the Ndjébbana talking books exemplified how the tools of this study were influenced by a critical approach to technology. So while the Ndjébbana talking books were a fairly simple technological ensemble, their design reflected social understandings of Kunibídji children that I had developed over years of working in Maningrida.

Producing the texts

Although the opportunities for learning and acquisition throughout the production of Ndjébbana talking books was not a focus of this research, I will still present some understandings of text production that have been used throughout the study. Production has been defined as the realisation of the design or the bringing of the design to life (Kress and van Leeuwen 2001, p.69). This section deals with the ways of realising the multimodal

design of the Ndjébbana talking books as tools for this research. The production of a variety of forms of digital texts has resulted in a range of opportunities for learning among students (Debski 1997;Lankshear, Snyder & Green 2002) and between students and teachers (Bigum 2002; Levy 1997c).

An important feature of the production of Ndjébbana talking books was the literacy practices that were integrated into the texts as they were being produced. Ormerod and Ivanic (1999) have suggested that there are past and future inferred literacy practices associated with the physical production of texts. The content and design of the Ndjébbana talking books inferred a set of literacy practices to the participants in this study. In order to gain some understanding about what was inferred to the participants in the final product of the texts, the literacy practices embedded in the production process will be outlined. The section on production of texts will conclude by examining the holistic nature of the 96 Ndjébbana talking books that were produced for Kunibídji children to access at home. Throughout this section, examples of the Ndjébbana talking books will be presented to illustrate the influences of the content and design of the texts on their production.

The Ndjébbana talking books combined outsider and insider literacy practices. As an outsider, I attempted to limit my influence over the literacy practices embedded in the Ndjébbana talking books. Just by my intervention there was a risk that the appeal of the texts to Kunibídji children might decrease because some of my beliefs and attitudes that may not have been congruent with the children's might have been integrated into the text. Christie (1989) suggests Indigenous Australian produced literature has greater appeal for Indigenous

Australian students than texts produced without their control. I took the view, however, that any Ndjébbana talking books that would be collaboratively produced between myself and Kunibídji community members were better than none at all.

As an outsider to Kunibídji literacy practices, I was convinced of the need to keep the texts workable for Kunibídji children. Lankshear, Snyder and Green (2002, p.125) suggest that the workability of any new technology includes its 'complexity, discontinuity and fragility' with reference to the improvement of teaching and learning. While the complexity associated with the technology has been dealt with in the section on design, the interactions of Kunibídji children with the Ndjébbana talking books gave an insight into the discontinuity and fragility of the texts. As the content of the Ndjébbana narratives embodied the design of each text, the congruency of the texts was tested for their continuity with Kunibídji social practice. A small number of Ndjébbana talking books were tested for how well Kunibídji children could decode the literacy practices and the meanings embedded in the text. At the same time, the workability of the texts also included recording any error messages or problems with the computer during this testing stage of text production. These technical problems were a measure of the fragility of the texts. My intervention and limited programming skills were other indicators of their fragility.

During this period of testing I was also provided with feedback from Kunibídji adults about their ontological understandings of the Ndjébbana talking books. There appeared to be no concerns about presenting Ndjébbana texts in this way; in fact the parents seemed delighted to be able to identify who was reading the texts and, in some cases, proudly identified

themselves as authors of texts that were being read by the children. So, before the texts were used in this study, I was fairly confident that they did not conflict with the ontological understanding of members of the Kunibídji community.

Collaborative partnerships between students were another literacy practice that were embedded in the production of the Ndjébbana talking books. The collaboration among Indigenous students during the production of digital texts has already been documented (Warschauer and Donaghy 1997, Yelland, Gilbert, White & Smith 1997, Henderson 1993b). A similar collaboration among Kunibídji students also happened as the Ndjébbana talking books were produced. Kunibídji students worked together to design the story, collect data or organise the data for use in the final text. This was an important affordance that was integrated into the texts.

Collaboration between students and teachers was another literacy practice included in the production of Ndjébbana talking books. Examples of collaboration between students and teachers during the production of digital texts indicated that the teacher's role is usually one of facilitation (Levy 1997b; Yelland, Gilbert, White & Smith 1997). One of the features of the facilitation in the production of the Ndjébbana talking books was that it involved collaboration between myself, a non-Indigenous teacher, and Indigenous students. Collaboration between Kunibídji teachers and Kunibídji students was also an important element in the production of Ndjébbana talking books. Kunibídji children and myself would defer to the expertise of Kunibídji teachers in negotiating the Ndjébbana content of the texts. Likewise Kunibídji children and Kunibídji teachers would defer to my expertise regarding

ways the data could be recorded or manipulated on the computer. An important point to make about this collaboration is that the literacy practices embedded in the texts were a combination of more than one knowledge system. Examples of the results of collaboration between students and teachers can be demonstrated in the Ndjébbana talking book, ‘Wekkana’ (night time), which can be viewed by clicking in the ‘show me’ button below.

Collaboration between the students and community members also occurred. The re-enactment of ‘Marrákama Ngabúyanga Mudíkkang’ (Buy me a truck) exemplified the use of kinship relations in the text. This text can be viewed by clicking on the link below.

The characters of the texts included a boy, his mother and his uncle. Although one of the boys in the class had been chosen by the students as the main character, the uncle in the book had not been identified. The production of the book commenced by identifying the kinship relations of many Kunibídji males in relation to the boy who passed by the shop where the photos were being taken. When an uncle of the boy was found and agreed to participate in the production of the text, the photos were taken. The collaboration between the students and community members was not just a way of producing the texts it was also reinforcing Kunibídji ways of seeing in the process.

Collaboration among Kunibídji adults was a feature of the production of some of the Ndjébbana talking books. The reproduction of the text 'Kánbaya Nganéyabba Kayóra' demonstrated the kind of community involvement that could be achieved in the production of the Ndjébbana talking books. This text can be viewed by clicking on the link below.

The original book, upon which this text is based, was made in 1980 when Old Betty told a story about a crocodile to a literacy worker at the school. The literacy worker transcribed the story and the pictures were drawn to match the text. Twenty-two years later, the literacy worker's daughter read the story back to Old Betty. As Old Betty orally repeated what was being read, her voice was recorded and matched to each page of the book.

The collaboration between print literate and non-print literate Kunibídji adults meant that adults who could not read were able to contribute to the recording of the text of the Ndjébbana talking books. As Betty's recitation of the text demonstrates, Kunibídji adults who could not read were constructed as role models in the reading process when their oral contributions were linked to the texts. The finished product did not distinguish between print literate and non-print literate Kunibídji adults. The results of these collaborative partnerships reinforced the ways print and oral literacies could be used to reinforce the meaning embedded in the Ndjébbana talking books. Similar Ndjébbana talking books, which were produced using Kunibídji adults who could not read printed Ndjébbana, were 'Marládja', 'Yíbarda' and 'Mardárdiba'. The talking book Marládja can be viewed by clicking the link.

The final kind of practice that I embedded in the production of the Ndjébbana talking books was the payment to Indigenous community members for their help in producing the texts. I negotiated payment for the services of the Kunibídji readers. Smith (1997) suggests that payment for Indigenous Australian research assistants in remote communities should be compatible with payments made to non-Indigenous research assistants in towns for similar work. The formal payment was supplemented with gifts of fish and buffalo as seen in the link below.

One of the advantages of living over the road from members of the Kunibídji community who were key contributors to the production of the Ndjébbana talking books, was that I could be sensitive to the other pressures of their lives. As I gathered the sound recordings for the texts over a number of years, I did not need to pressure the contributors into participating. Although I would normally negotiate a time on the weekend to record a book or two, I was receptive to last minute changes in the arrangement, particularly when the fishing was good. The production of the Ndjébbana talking books was carried out in relation to a Kunibídji time frame. My attempt to fit in with Kunibídji norms demonstrated my respect for the participants in this study. So, while the texts had an economic value attached to their production, members of the Kunibídji community dictated the timing of the contributions to text production.

Throughout the production of the Ndjébbana talking books I was working as a teacher at the school. This provided me with opportunities to collect data for the books as part of the school program. Most of the books, however, were made outside school hours with support from the members of the Kunibídji community.

There were several kinds of Ndjébbana talking books produced. Initially, there were those that were created from the existing Ndjébbana printed books. I asked various Kunibídji community members for their help to record the reading of these texts on the computer. Original black and white pictures of these texts were coloured by hand and scanned into the computer to become a digital picture resource. Most of the texts in these older books were

typed and saved as text documents for use in the talking books. An example of a Ndjébbana talking book that used reproduced illustrations is provided with the link below.

The reason the original black and white pictures were coloured was to give the Ndjébbana talking books visual continuity with the texts that included colour digital pictures of Kunibídji children. Existing Ndjébbana texts which used colour digital photos were the second kind of Ndjébbana talking book created as part of this study. The interest of Indigenous Australian children in photos has been well documented (Watson & Roberts 1996; Barker 1974). I expected that the preference Kunibídji children had displayed in the past for photos in the classroom would also feature in the Ndjébbana talking books. An example of a Ndjébbana book that included photos be seen by clicking the button below.

A third kind of Ndjébbana talking book was created by selecting an appropriate older Ndjébbana printed text and taking digital photos of Kunibídji children acting out the story. As part of the talking book production, the students often recorded the sound for these texts. Some students typed the text onto a computer as part of the production of this kind of Ndjébbana talking book. One of these texts can be seen by clicking the link below.

Another example of the same kind of texts is also available.

Some completely new Ndjébbana texts were created during the period of this study. These constituted the fourth kind of Ndjébbana talking book. Kunibídji children were in charge of producing the text, photos and sounds that were used in these Ndjébbana Talking Books.

Typically the production of new Ndjébbana talking books began with a negotiated storyboard, on which a rough outline of the pictures to be used in the text was drawn. These storyboards were matched to a text that had previously been written either by the students or by a member of the Kunibídji community. With these representations of the story in mind, some of the students would then act out the story while others took digital pictures of the scenes. Back at school, the students would then match these pictures to the associated pages of the text. This process was not new for Kunibídji children as they had produced many printed books in a similar manner. I found the collaboration around the digital production of text and sound limiting because Kunibídji students were faced with software that was all in English, which defeated the Ndjébbana language experience. Rather than viewing the software as a deterministic technological barrier, the digital production was mediated by myself or an Indigenous Australian literacy worker who was literate in sound recording, word processing and digital photography. I perceived the digital recording of the texts, sound and pictures with an Indigenous Aboriginal Education Worker as a natural extension of this negotiated experience.

Another type of new Ndjébbana texts that were produced documented the school camping trips to Kunibídji country. The digital pictures were printed out after these trips and the texts were created to match the pictures. After checking the narrative of the texts with Kunibídji community members for its grammar and spelling, these texts were then produced as printed books as well as talking books.

The remainder of the Ndjébbana talking books were the result of collaboration between several Kunibídji women and myself. These Kunibídji women read a number of previously produced books which were recorded on the computer. They finalised the new texts. They checked the grammar and content of the texts as they went. They were very helpful.

Production of these texts was not just a matter of sitting down and reading the texts. The sound was recorded on a computer that was taken to a variety of locations in Maningrida and to nearby homelands where the women were living at the time. Readings were often interrupted by noises that were a natural feature of these home environments, such as children, dogs, cars or just the afternoon sea breeze. Once the sounds had been recorded, production of the majority of the Ndjébbana talking books involved the collation of sounds, texts and pictures which I did at home.

The recording of these sounds was integral to the final product and the literacy events that were to follow. Previously produced Ndjébbana talking books became an important frame of reference which I could show people who were helping me produce Ndjébbana talking books. Some of the women already knew about the books, while, for others, the books

provided a key frame of reference for the work that was to follow. As the number of texts began to grow, anybody who contributed to the production of the texts could understand the importance of their contribution to this study.

The holistic nature of the texts that were produced was enhanced by presenting all the texts in a linked multimedia format. The range of collaborations that occurred during the production of the Ndjébbana talking books, from a holistic perspective, suggests the 96 texts were not just 96 separate books. The 96 Ndjébbana talking books that were developed were the result of more than just the 96 different 'discourses' or bits of Ndjébbana language put together. Donaldson and Morgan (1994) suggest that the production of digital resources for a small scale language program often involves a synergy in which the product is more than just the sum of the parts. The Ndjébbana talking books captured the 25 years of struggle by members of the Kunibídji community to negotiate the 'Discourses' these texts occupied. The Ndjébbana talking books were part of this continuing struggle.

The 96 Ndjébbana talking books were linked together in a multimedia format. Each Ndjébbana talking book was represented as a button that displayed a picture and the title of each text. The buttons of the 96 Ndjébbana talking books could not be presented simultaneously so six buttons were represented on each of 16 different pages. Kunibídji children could move between these pages of buttons by using two arrows that moved forward or backward through the 16 pages. An important feature of these 16 pages was that they were presented in a cyclical manner so there was no first or last page. Turning over page 16 the children came to page 1. The 16 button pages can be seen here.

When the children pressed a button, the chosen Ndjébbana talking book was opened. Each Ndjébbana Talking Book was presented as a series of pages that had elements of text, sound and pictures. When a page opened, the sound played and each word of the text on that page was highlighted as it was read. There were three buttons at the bottom of each page, two for turning the page and one to stop the book.

When the children clicked on a button to finish reading the text, which they could do at any stage, they were sent randomly by the computer to one of the 16 pages of buttons. This was a part of the design of the Ndjébbana Talking Books aimed at promoting awareness amongst the children of the range of texts available. So, design of the Ndjébbana Talking Books was not biased towards a certain page of buttons, which was an important feature when the children were making independent choices about the texts. The choices the children made regarding which book to read was not influenced by the computer sending the children to the same pages of buttons each time they stopped reading a book.

A link to the 96 Ndjébbana Talking Books can be found below.

In the production of the tools of this study I also attempted to overcome the marginalisation of members of the Kunibídji community. The purpose for the production of the texts was not to assimilate members of the Kunibídji community into consumers of information using a computer. Instead, the access to the texts on the computer provided community members with opportunities where social relations could be reinforced and negotiated as the texts were produced and distributed. Schrage (1998) suggests that 'the design of relationships is more important than the design of information.' Schrage (1998) also argues that the biggest impact of digital technologies is on relations between people and between people and organizations. The production of Ndjébbana talking books had the capacity to potentially change the relations between print literate and non print literate Kunibídji adults. The production of the talking books also demystified the physical spaces in which texts were traditionally produced by moving a computer around the community to gather and organise data. I made a point of continually explaining to interested community members the purpose of my visit and how the data collected would be made into texts.

Distributing the texts

One of the features of the Ndjébbana talking books was their focus on the use of the computer as a distributive medium. Kress and Van Leeuwen (2001, p.67) distinguish between technologies that support production and those that support distribution. The printing press, for example, supports the production of printed texts, while the radio is a technology that supports the distribution of oral messages. The computer can support both production and distribution. Connecting to the internet through a web browser is usually

associated with consuming web sites, which makes the process one of distribution. Computers can also be effective tools for distributing texts in an off-line environment, using specific software that can mediate minority texts in a minority Indigenous Australian language.

As the tools of this study were intended to distribute the Ndjébbana texts to Kunibídji children around their own homes, I tried to make the computer as transparent as possible so the texts could be easily read by the children. Transparency is the condition in which the user forgets or is unaware of the presence of the medium (Warnick 2002, p.10). The transparency of the Ndjébbana talking books was paramount as I realised I should present the texts in a way that did not require Kunibídji children to acquire a new technological literacy. An aspect of the critical approach to technology that informed this study was my search for a way of making Ndjébbana print literacy more accessible for Kunibídji children. While the Ndjébbana talking books produced for this study were more transparent than printed Ndjébbana books, my search for a transparent distribution tool to complement the Ndjébbana talking books had begun. Rather than concentrating on transforming the children to fit a new literacy, I was searching for a way to transform the technology to make it more accessible for Kunibídji children.

Removing the need for Kunibídji children to interface with the computer using a keyboard increased their capacity to access the Ndjébbana talking books. As many Kunibídji children and their parents are not print literate, keyboards may have had the unintended effect of alienating the participants from the tools of this research. A keyboard was not necessary for

the computers in this research as the participants could read all the Ndjébbana talking books by performing mouse clicks. To further increase the transparency of the Ndjébbana talking books, I replaced the mouse with a touch screen. Touch screens operate by placing a touch sensitive material over the screen of the monitor. The touch screen hardware is linked to computer software that simulates a mouse click at the exact location where the screen is touched. All of this technology was able to fit into an older style I-mac computer, which meant the screen and the central processing unit was all in one unit. This had the advantage of requiring only the power to be plugged into the back of the computer and no other leads were necessary for the touch screen to operate. This was particularly appropriate given the dusty conditions where the computers were located.

The use of touch sensitive screens is not a new technology in an Indigenous Australian context. Dench (1990) has used touch sensitive boards with computers to support the learning of Wangkatja and English through a variety of interactive strategies. Touch sensitive boards were used in activities such as matching words and pictures or creating short sentences by touching words displayed on the screen. The computer in Dench's (1990) study, however, took the role of a tutor. Taylor (1980, p.3) has suggested that where computers are used to evaluate the students' interactions, computers take the role of a tutor. This study used the computer more as a tool to distribute texts in the homes of the children. So the design of the texts and the selective use of computer technology that mediated the texts were attempts to keep the tools of this study transparent to Kunibídji children. The transparency of the Ndjébbana talking books in this research was critical since Kunibídji children would be acquiring the social practices that were associated with reading these texts. Unlike Dench's

(1990) study, support to mediate the texts on the computer was not available from teachers or researchers.

Many Kunibídji were familiar with talking books on touch screens in Maningrida. As part of an Aboriginal Benefits Trust Association grant, five touch screen computers had been purchased to provide access to a number of talking books that had been produced by me at the school. These touch screen computers were placed at the airport, the shop, the resource centre, the council and the school for the community to access a total of 45 talking books in 7 different languages. These were placed in the community for six months, although some were removed earlier due to technical problems. Nine of the 45 talking books were presented in Ndjébbana. Over time, these touch screen computers stopped working and were gradually returned to the school. They were then repaired and used in this study.

The community was familiar with the technology that was to be used to present the tools of this research before the study began. When a touch screen computer was used for part of this study, most Kunibídji community members knew about the capacity of the computer to display interactive texts to the children. However, only a few Kunibídji knew there were now 96 Ndjébbana talking books available on the touch screens for the children to read for the purpose of this research. So many members of the Kunibídji community had experienced accessing touch screen computers in Maningrida before this study began. The use of touch screen computers to mediate a relatively large number of Ndjébbana talking books for this study was a new experience for Kunibídji children.

An important feature of the distribution of the Ndjébbana talking books was to investigate how the social practices of Kunibídji children could influence the design of the technology that was used to mediate the Ndjébbana talking books. There would have been little point in producing the Ndjébbana talking books and displaying them on the desktop of a computer placed in the children's homes. From experience, before long, the children would have disabled the operating system, not through any acts of malice, but through their tinkering. My attempts to keep the distribution of the Ndjébbana talking books relatively invisible to Kunibídji children was a mark of how the critical approach to research informed this study. In this study, the Ndjébbana talking books were placed in the startup folder, so whenever the computer was turned on it displayed the text buttons. The children could not get to the desktop or the operating system as there was no way of quitting out of the 96 talking books short of turning the computer off. Of course when the computer was restarted, the Ndjébbana talking book buttons reappeared for the children to make their choices.

I have discussed how the tools were distributed in a technological sense. The next section describes how I distributed the Ndjébbana talking books on touch screen computers amongst Kunibídji homes. I outline how the data was gathered for this research, using the tools that had been created.

The research design

Although I have outlined the theoretical framework of the methodology and the way the tools were developed for this research, I have not mentioned the design of the study. The design will make more sense once an understanding of the theory and practice of the tools of this research has been presented.

As well as producing and distributing the Ndjébbana talking books as the research tools, this research involved collecting qualitative and quantitative data. The qualitative data involved video taping the literacy events constructed by Kunibídji children as they negotiated the Ndjébbana talking books. Although I had planned on distributing the Ndjébbana talking books on several touch screen computers in the community, only one computer was working when all the 96 Ndjébbana talking books had been produced. While one working touch screen computer was far from the optimal way of distributing the talking books, there were some advantages in only having one working computer. One consequence was that any errors that were identified in the texts could be immediately rectified on the computer. If there were multiple computers the process of identifying errors and changing the data would become rather complex as I would have been working with multiple sets of data in the community. Another advantage in using only one computer during the qualitative stage of the research was that technical support was kept to a minium, as I only had to maintain one computer. In a remote community with limited resources, I was able to concentrate on collecting the qualitative data rather than keeping the computers working and distributing the Ndjébbana talking books.

The qualitative data collection involved asking permission of the appropriate Kunibídji adults to place the computer outside their home and to videotape any interactions of Kunibídji children with the Ndjébbana talking books. As I have previously mentioned, this was not just a process of asking permission but also promoting awareness amongst members of the Kunibídji community about the aims of the research. Although only one computer travelled with me around the community over a number of months to various houses where the qualitative data were being collected, there were limitations on such a design.

One problem was that the literacy events recorded throughout the qualitative data collection phase might not have been representative of Kunibídji children's interactions with the texts if they had been given more time to access the texts. If there had been more computers available to Kunibídji children, their amount of interaction with the Ndjébbana talking books in the literacy events may have been different. If there were more computers, the interactions with each computer might have been fewer if the children thought there was ample opportunity to access the texts on a number of computers. Children might have been spread amongst the computers rather than congregating in relatively large numbers around the one computer.

Another problem in the study design was that the recorded literacy events may have been influenced by the novelty of Kunibídji children being able to independently access 96 texts in Ndjébbana. Although the children had experience with the touch screen computers in the community, access to such a large number of texts at home had not been an option for them before this study began.

One way of checking if the Kunibídji children's interactions in the literacy events was influenced by the novelty of access to the 96 Ndjébbana talking books at home, was to design a quantitative study that recorded the number of times the texts were accessed after the qualitative phase of the study had finished. The quantitative study would record the name of the book, the page number and the date and time that the page was read to the children. If the access to the texts was relatively limited in the quantitative phase of the study, it would suggest that the novelty of reading the Ndjébbana talking books had worn off. On the other hand, if the children still showed interest in reading the texts in the quantitative phase of the research, there would be something besides the novelty of the texts motivating the children to read them. The quantitative study will provide useful evidence to further highlight the children's literacy practices enacted throughout the literacy events in this study.

The sites of data collection

By the time all 96 of the Ndjébbana Talking Books had been created, several Kunibídji community members had spent many hours contributing to their production. The process of data collection began around Kunibídji homes where large numbers of children tended to play. At each site I asked permission of the appropriate Kunibídji adults to place the computer for a couple of hours a day for the children to read the Ndjébbana talking books. A total of 57 video tapes of the production and reading of the Ndjébbana talking books were recorded across six different sites in the community with each tape lasting about 45 minutes. The list of dates and places where the literacy events were filmed is listed below in Table 1. These sites of data collection were negotiated spaces between Kunibídji adults and myself.

Date	Activity recorded	Length of tape (min)	House lot number
29/6/1	Creating texts	36	426
29/6/1	Creating texts	45	356
11/7/1	Creating texts	40	433
11/7/1	Creating texts	36	433
13/7/1	Creating texts	41	350
17/7/1	Creating texts	38	Rocky point
24/7/1	Creating texts	37	433
4/8/1	Creating texts	39	613
5/8/1	Creating texts	39	613
5/8/1	Creating texts	40	613
18/8/1	Children reading	41	408
18/8/1	Children reading	41	408
19/8/1	Children reading	42	357
19/8/1	Children reading	41	357
21/8/1	Children reading	41	613
21/8/1	Children reading	41	613
26/8/1	Children reading	42	365
26/8/1	Children reading	42	365
27/8/1	Children reading	43	408
28/8/1	Children reading	42	433

28/8/1	Children reading	41	420
30/8/1	Children reading	42	433
30/8/1	Children reading	41	433
25/9/1	Adding texts	33	426
11/10/1	Adding texts	42	426
11/10/1	Adding texts	40	426
16/10/1	Children reading	42	433
17/10/1	Children reading	41	408
17/10/1	Children reading	42	408
18/10/1	Children reading	41	365
21/10/1	Children reading	40	408
21/10/1	Children reading	40	408
22/10/1	Children reading	41	365
22/10/1	Children reading	41	365
23/10/1	Children reading	41	408
23/10/1	Children reading	41	408
24/10/1	Children reading	41	421
24/10/1	Children reading	39	421
24/10/1	Children reading	42	421
25/10/1	Children reading	41	357
25/10/1	Children reading	39	357
5/11/1	Children reading	41	421
24/10/1	Children reading	43	421

6/11/1	Children reading	43	408
6/11/1	Children reading	43	408
7/11/1	Children reading	43	365
10/11/1	Fixing errors	42	426
11/11/1	Children reading	43	420
11/11/1	Children reading	43	420
11/11/1	Children reading	43	420
20/12/1	Children reading	11	421
23/12/1	Children reading	43	357
23/12/1	Children reading	18	357
23/12/1	Translating data	42	426
23/12/1	Translating data	21	426
24/12/1	Children reading	43	419
24/12/1	Children reading	18	419
27/12/1	Translating data	43	350
30/12/1	Translating data	43	420

Table 1: The dates, activity and location of the videos recorded for this thesis

Often my negotiations with appropriate Kunibídji adults began by reiterating the purpose of the study. The negotiated process of asking permission to locate the computer outside their home and video tape the children was contextualised by the strong link back to the purpose

of the study. So I was not only seeking permission of Kunibídji adults to collect data, but I was raising the awareness of the purpose of the study at the same time.

Having negotiated permission to collect data, the physical location of the computer was to be negotiated. While I have suggested throughout this thesis that I would be providing opportunities for Kunibídji children to access Ndjébbana texts in their own homes, the data for this study actually came from placing a touch screen computer <u>outside</u> a variety of Kunibídji homes. The space outside the home, however, is often an extension of the living area of the family. As there is a long dry season in the Top End, televisions, stereos and video recorders are often placed outside at night in many remote Indigenous Australian communities, where they are viewed by more than just the immediate family. So asking several families for permission to locate a touch screen computer outside their homes probably did not seem unusual to Kunibídji parents. Parents had their own views about to the best places to locate the computer since they knew where the children liked playing or watching televisions outside their homes. This alleviated my concerns about invading the privacy of Kunibídji homes as part of this study. I was locating the computer in spaces between their private rooms inside their homes and the public space of the road where other people passed by.

Integral to these spaces where the computer was located was the fact that the children were free to come and go from the location of the touch screen computer as they wanted. The locations outside the homes also configured the computer to compete for the attention of

Kunibídji children against other activities, such as games the children played outside, television shows and videos.

A second negotiated process involved accessing a power source for the touch screen computer and the video camera. All households in Maningrida that are tenanted by Kunibídji have a power card system, whereby prepaid cards are inserted into the power meter to provide the house with power. I considered it only fair to provide the household with some money for the purchase of the next power card when I used the computer at their home. Sometimes power was a limiting factor in this research. I would often get permission to display the Ndjébbana talking books only to find the house did not have any power when I arrived with the computer.

The sites of data collection in this research were subject to 'fluidity and constant renegotiation' (Criticos and Quinlan 1993, p.44). Although I obtained permission of the appropriate Kunibídji adults before I located the computer and video, I was aware of the changing social arrangements around the computer as the filming took place. The permission I had sought was regularly reaffirmed with the appropriate Kunibídji adults throughout the recording sessions. Occasionally situations arose during filming such that it was not appropriate for me to continue to collect data. On the other hand, some data collection periods were longer than planned.

The use of video

There were several advantages of using video in this study. Videos have the advantage over other media as they can capture nonverbal behaviour that can 'facilitate the interpretation of the interactive process' (Nastasi 1999, p.7). Videos captured how things were said in each literacy event with the Ndjébbana talking books rather than just presenting what was being communicated between the children. As I mentioned earlier, some behaviours that may have influenced the literacy events were not captured on video since they occurred outside the range of the camera even though they may have influenced the literacy events.

Another advantage of using videos was that their use meant that data could be collected in the absence of Kunibídji research assistants. The data could be viewed and translated by Kunibídji community members at a time convenient to them. The community pressures on Kunibídji adults who supported the production of Ndjébbana talking books and translation of video recordings were significant. The viewing and translation of the data became a social event where the parents gained an understanding of how the children valued the social practices of reading Ndjébbana talking books at home.

Video captured the complexity of the social interaction of the children with the Ndjébbana Talking Books better than note taking or audio recording. Video was useful as the complexity of the many interactions of Kunibídji children in the literacy events could be captured and then analysed at a later date. The video was mounted on a tripod behind the computer to capture the variety of social arrangements that formed in the literacy events.

The use of video was limiting in some regards. The behaviour of the participants may have been influenced by the video. Some adults may not have participated as they may not have wanted to be filmed. There are specific cultural protocols related to why some adults wish not to be filmed. Some of these include a belief against the capturing of their image on film and the loss of control of that image subsequent to their death. Another related issue is the loss of control over the participant’s image to a Kunibídji audience who may include people who would not normally wish to see the other’s behaviour. Certain kinship relations exist in Maningrida, for example, based on avoidance which may preclude one member of the relationship watching another’s images on video.

Another problem with using video as the main source of data for the qualitative study was that the children’s individual interactions with the Ndjébbana talking books were hard to elicit. Since the video was taken behind the computer, the video did not capture the text that was being displayed by the computer. I felt it was important to match the talking book that was displayed on the computer to the video of the children reading the texts to provide a more thick and rich description of the literacy events, to which text was being shown or what aspect of the text the children were talking about.

The Quantitative data

The computer recorded data about the texts being read in the literacy events by the children as the videoing was proceeding. As I have outlined in the design of the Ndjébbana Talking Books, touch screen computers collected quantitative data for this research project. This data provided times when each page of each book was accessed, as well as times when the 16 pages of buttons were viewed. An example of the data that was recorded is provided below.

Thursday, 20 December 2001,19:36:11,5038

5038,5

5148,26,1

5377,10

5517,9

5557,8

5616,7

5735,6

5849,5

5917,4

6044,5

6086,6

6387,31,1

6594,31,2

7249,31,3

9005,31,4

The first number of each line represents the time. The first number of each line was the time, recorded in 60th of a second. So the difference between the first number of consecutive lines divided by 60 is the length of time that the screen displayed the page of the book. Where there are two items in a line, the second item is the button page number. Where there are three items in a line, such as line 2, the second item is a number allocated to the book that is open, while the third item is the page number of the book. For instance, from the second line I knew that page number 1 of book number 26 was open for (5377-5148)/60 seconds. I also knew only the first page of this book was read before next text was selected. A list of all the books and their corresponding numbers is provided here. This data was recorded on the computer as the children were looking at the talking books.

After I had collected each video, I was able to cross check the quantitative data with the qualitative data recorded on the video. I was able to see if the books that I was hearing being read on the video were those that were being recorded by the computer. On every tape it appeared to correspond perfectly. This was important as I could then have confidence in the validity of the quantitative data collected by the computer. I was planning to use this kind of data collection to record how often the children accessed the Ndjébbana talking books when the computers were left in the houses for periods of several weeks. Eventually, these coded numbers became an essential element in the way the literacy events were represented in this study. An understanding of the problems relating to the translation of the Ndjébbana Discourse in the literacy events is covered in the next section.

Data manipulation

There were several stages of data analysis that were planned in this study. The first was data manipulation. I transferred all of the digital videos taken of Kunibídji children engaging with the Ndjébbana Talking Books onto the computer for editing purposes. Transferring the videos to computer also served as a means of backing up the data.

I edited the videos into sections where there were continued commentaries in Ndjébbana either about the text or comments on the text. These were saved as quicktime movies. My original intention was to work with Kunibídji community members in a research partnership to transcribe the Ndjébbana discourse in these movies into Ndjébbana printed text. The printed Ndjébbana would then be translated into printed English that could be inserted as vignettes in the thesis.

The planned transcription and translation process outlined above was not feasible due to the limited availability of Kunibídji who were literate in Ndjébbana transcription at the time when the data was being analysed. However, there were several Kunibídji community members who were willing to help in translating the spoken Ndjébbana on the tapes into oral English recounts of the discourse. Integral to the technique I developed for translating the data, was my recognition that most Kunibídji liked to watch a video of themselves or their peers. I knew that more Kunibídji could speak English than write English, so effective research partnerships could be formed where I transcribed the spoken English. I also encouraged the translation of the videos from Ndjébbana into English to be a social process where triangulation of the data was occurring as it was being translated.

With help from members of the Kunibídji community, I created subtitles that translated the oral Ndjébbana discourse into English. An important feature of these subtitles was that they were displayed in a text field below the video. The entire English translation was stored in an invisible text field and displayed one line at a time at the appropriate time below the video. Translating the Ndjébbana discourse into a complete English field provided easy editing of this text as it was not part of the video. The translation was a dynamic process where the community members could instantly check the English translation with the spoken Ndjébbana in the video.

After a few demonstrations, the process of translation was a matter of playing part of the sound byte of the video on one application and my writing down the English translation that had been negotiated amongst the community members in another application. An example of the context where this was happening is viewed using the link below.

The whole process was kept meaningful since the Kunibídji community members could see their results almost instantaneously as a changing English text below a video of the children with the computer. An example of one of these translated videos is linked below. Obviously, Kunibídji adults who participated in the translation process were paid for their services.

I entered this study knowing that the literacy events of the children would be more representative if the corresponding pages of the texts the children watched could have been added to the video. As my tools and data were digital, the matching of the two was possible. The quantitative data collected on the computer was matched to the frame numbers of the QuickTime movie that were also invisibly being recorded. I was able to extend the program written for displaying the translated video to show what the computer was displaying at the time of every frame of the video. Below the picture and text displayed by the computer, I added another field that presented an English translation of the page of the Ndjébbana Talking Book. A demonstration of the way the videos were linked to what the computer was displaying can be seen using the link below.

An important feature of representing the literacy events in this way was the use of subtitles. MacDougall (1998) has identified several problems with subtitling ethnographic films, which may relate to the literacy practices represented in this study. One of these problems was that subtitles tend to 'isolate and heighten' (MacDougall 1998, p.174) material that would otherwise be represented as continuous speech. Another problem relates to how subtitles tended to focus on what was said rather than what is being shown (MacDougall 1998). As the literacy events represented in this study were fairly short in length some of these problems were overcome by viewing the film more than once. Repeated viewing of the same literacy events as represented in the above examples was supported by its digital format. The digital video linked to the images and text displayed by the computer was a better way to represent the literacy events than a textual transcript. Representing the behaviours of the participants in this form was a valid way of presenting the literacy practices of Kunibídji children.

The use of vignettes

A vignette is 'a short dramatic description, some of which typify, creating a composite of all the people or events studied; others dramatise a person, act, event or activity so as to catch the attention of the reader; and still others summarise a biography, event or other phenomenon' (LeCompte and Schensul 1999a, p.181). In this study, vignettes served to illustrate the interactions that occurred around the computer in a form that conveyed the complex naturalistic context of the literacy events of Kunibídji children. Vignettes were also useful in explaining the results of the study to interested members of the Kunibídji community.

The use of vignettes in this study complemented the naturalistic setting. As the movement of people around the touch screen was rather complex, the literacy practices of Kunibídji were elicited from the digital vignettes of the literacy events. From personal experience, the mobility of Kunibídji children made tracing specific representatives of the Kunibídji community a difficult task. In this study, I found the participants in the literacy events were dynamic, as they were free to come and go as they pleased. Adding to the complexity was the children's degree of engagement and the kinds of contributions they were making. Children tended to move in and out of different roles of listening and speaking during the literacy events.

The use of vignettes seemed a justifiable way to proceed since they had been used in other studies with similarly complex natural contexts. Harris's (1980) study of the learning styles at Millingimbi used this method to examine informal behaviours across a whole community, drawing on examples to conceptualise the five results. In an Indigenous Hawaiian context, Warschauer and Donaghy (1997) used a similar approach to describe the use of computers in a language learning context. The context of this study had many similarities with the complex learning environments described in both of the Harris and Warschaur and Donaghy studies. This similarity justifies the use of vignettes as a valid data collection technique.

There are different types of vignettes that I used to represent the literacies of Kunibídji children in this study. LeCompte and Schensul (1999a, p.181) suggest some vignettes will be normative depictions of what the researcher considers to be 'authentic cultural representation', while critical event vignettes portray unusual events that are not typical. In

this study, I was expecting a mixture of both kinds of vignettes. The process of promoting access to a touch screen computer displaying Ndjébbana texts to Kunibídji children could be considered a critical vignette in itself. On the other hand, I was expecting that some normative depictions of Kunibídji social practice would be identified in the literacy events with these texts.

Obviously the naturalistic setting of the vignettes in this study has been influenced by my presence as a researcher. I cannot determine the extent to which my presence changed certain social norms or language choices in the literacy events. I have attempted to bring a transparency to the vignettes in this study where readers of the thesis can judge for themselves the degree to which the vignettes were influenced by my presence.

Data Analysis

The literacy events of Kunibídji children interacting with Ndjébbana talking books were analysed in a variety of ways. One of the methods of analysis was to articulate my own reflections at the time in the field. I considered the children's perceptions of the literacy events as well as their preferences in accessing the Ndjébbana texts. I also considered my role in intervening in the social practices of Kunibídji children to promote their access to the Ndjébbana talking books.

Another form of data analysis of the literacy events was the analysis of the digital vignettes. As the videos were translated from Ndjébbana into English, the non-verbal behaviour and its relationship to the emerging literacy practices could also be observed. When the oral

discourse of the literacy events was linked to the Ndjébbana texts that were displayed by the computer, more evidence of particular kinds of literacy practices began to emerge. The process of integrating the videos with subtitles and the Ndjébbana talking books watched by Kunibídji children provided me with opportunities to reflect upon their beliefs about and attitudes towards Ndjébbana texts.

Thick and rich descriptions of the literacy events were presented in the digital vignettes. Miles and Huberman (1984, p.56) have suggested that words are fatter than numbers when presenting the findings of research to the reader. In my opinion, the multimedia forms of the digital vignettes, developed for this study, are fatter than words. Searching for the links between the changing video, translated text and Ndjébbana talking books provided me with multiple opportunities for analysing the data.

Some analysis of the data took place through reading and re-reading the digital vignettes of Kunibídji children's literacy events. The repeated readings of the digital vignettes further articulated the literacy practices of the children with the Ndjébbana talking books. My repeated readings of digital vignettes provided me with opportunities to reflect upon the merit of my non-Indigenous intervention as an integral part of this study. The repeated readings of the digital vignettes also provided me with opportunities to critically examine the linguistic human rights of the participants as a central component of my theoretical framework. Carspeckan (1996) distinguishes between 'human activities that have become patterned' (p.38) as part of a social system and those activities of the study site where the routine activity of the study takes place. Through repeated readings of the literacy events I was able

to link some of the literacy practices of the children to their broader social system. My reflections on the repeated readings provided me with an argument about the merits of Kunibídji children accessing Ndjébbana talking books.

The quantitative data that was collected by the computer throughout the study was also analysed. This analysis distinguished between interactions of the children with the computer that involved choosing a specific Ndjébbana talking book and those that involved turning the pages of a chosen text. Other analysis determined how often each Ndjébbana talking book was accessed. The quantitative data was not analysed by any statistical technique other than those described above due to the complexity of variables in each page, picture, text and sound in the Ndjébbana talking books. The quantitative data provided evidence to support my interpretation of the literacy practices in this study.

Presenting the thesis on a DVD medium

DVD (Digital Video Disk) technology was one way of integrating and storing the multimedia data generated from this study. Although DVDs have been used to display commercial videos, they are also useful for storing and presenting data. While only a limited number of computers can write to DVDs, the number that can read DVDs is steadily increasing. At present DVDs used for data can hold between 4.7 to 18 gigabits of information. Compared with CDs, DVDs can hold at least 6 times more data. This technology is useful in reporting the research. Using DVD technology, I was able to present the Ndjébbana talking books and the videos of the literacy events to readers of this thesis so that the children's voices were a central feature of this research.

Data can be presented in a DVD medium in any digital form. Initially, I decided to present this thesis as a series of web pages with the digital vignettes embedded amongst the academic text. After much investigation I found the video was not compatible with the web browsers when it was integrated into the digital vignettes. I decided to use self-running applications in both PC and Mac operating systems. I am aware that computer operating systems are constantly changing and there may be a risk that the thesis may not be readable on future operating systems. I will be interested in revisiting the possibility of a web based production at that stage. I will also be interested in identifying how established the field of digital ethnography (Masten and Plowman 2003) has become at that time.

The idea of presenting the thesis on a DVD emerged as the digital vignettes were being developed. I did not choose to present on a DVD just because the technology was available. That would be taking a deterministic approach to technology which is not consistent with my theoretical framework. The choice of presentation of this thesis on a DVD medium was about solving an existential problem of translating Ndjébbana discourse. There were logistical, semiotic and ideological reasons for presenting this thesis on a DVD.

Some of the logistical reasons for presenting the thesis on a DVD have already been covered. The digital texts that emerged as a way of translating this data could only realistically be presented in a digital form that could accommodate digital video in an integrated multimedia presentation. There was no other way to translate the large amount of data that was generated

by this research. The problem of translating large amounts of spoken Ndjébbana into printed English was solved by using the digital vignettes in the thesis.

Another logistical reason for presenting the thesis on a DVD medium is that it provides the members of the Kunibídji community with a way of accessing the final report. Lukabyo (1999) suggests that the research process needs to be designed in the most 'acceptable manner' to the participants. Presenting the digital vignettes on a DVD medium makes the content of the vignettes more accessible to the majority of Kunibídji than if they were presented as printed academic text. A report to the participants was fairly easily constructed by removing the English translations provided in the digital vignettes. The vignettes can be linked together by an oral Ndjébbana narrative so a wide range of community members can access the findings of this research. I feel my attempt to report the findings of this research in the preferred language of the participants is a mark of my respect for the participants.

A further logistical reason for presenting the thesis on a DVD is that the digital vignettes are the best way to represent the complex discourse around the touch screens to non-Indigenous examiners who will probably be illiterate in Kunibídji social practice. Just as the digital vignettes appear to be the most practical way of transcribing and translating the Ndjébbana discourse, the same vignettes are the best way to provide a thick and rich description of the research to non-Kunibídji people reading this thesis. However, to understand why the digital vignettes are useful in an Indigenous research context some semiotic reasons also need to be discussed.

Semiotic reasons for presenting this thesis on a DVD relate to how new digital literacies can provide better representations of meaning through their intertextuality and hybridity. Literacy is always evolving (Lankshear, Synder and Green 2000) and an understanding of the inter-relationship between literacy and technology is needed to establish how we enact texts and make meaning. This is particularly important as my research presents new literacies in both Indigenous Australian and academic contexts.

The semiotic reasons for presenting a thesis about the literacy practices of Kunibídji children on DVD can be framed in the context of these changing literacies. An important semiotic feature of digital literacies is their multimodality. The New London Group (1996) suggest a multimodal meaning making system incorporate elements of visual, linguistic, spatial, audio and gestural designs. DVD technology has the capacity to integrate texts with multimodal elements as an effective way to present the findings of this research. The digital video and Ndjébbana talking books present to readers of the thesis a multimodal meaning making system that can be decoded using digital literacies. When these multimodal elements are integrated with an academic text the research will hold more integrity.

Two key features of a multimodal meaning making system are its intertextuality and hybridity (Fairclough 1992; New London Group 1996). A multimedia thesis presentation would be an example of mixed intertextuality which is characterised by different discourse types that are merged and difficult to separate (Fairclough 1992). There are at least two applications of intertextuality on a DVD thesis. First, the thesis can accurately document the intertextuality of the Ndjébbana talking books. These talking books integrate the different

channels of text, sound and pictures and use intertextuality to convey meaning to the users. Each channel, on its own, carries only limited meaning and all the channels need to be played at once to convey the full meaning of the book. A second application of intertextuality in the thesis is linking the critical commentaries of the thesis to the digital vignettes of the literacy events. The meaning the reader draws from the thesis would be a combination of the two texts.

The hybridity of the text, which draws on the available designs of meaning to make new texts (Cope and Kalantsis 2000), is the second feature of multimodality. The creation of the Ndjébbana talking books is a good example of Kunibídji hybridity. Many older members of the Kunibídji community, who were not print literate, were included in the text production. Including their contributions to the literacy events in this research is another way of extending the hybridity of this thesis. To do this, I need to present the thesis on a DVD. A thesis on a DVD can integrate everyday academic literacies associated with digital texts with printed literacies associated with reading a paper bound thesis.

My thesis, presented on a DVD, explicitly challenges the lack of hybridity afforded by paper bound thesis. The rules and regulations about the form of a thesis need to evolve to make use of new literacies that can better represent any research context including Indigenous research contexts, with more validity than printed bound theses. As I have argued, by using a digital medium I can integrate the tools and data of this research to provide new types of thick and rich descriptions. The vignettes, when integrated with academic discourse, will provide one example of how a thesis on a DVD can establish a new hybridity. These digital vignettes

provide a more accurate and qualitatively insightful representation of Kunibídji social practice around the computer than a paper bound description, mediated by my interpretations, could have done.

In the literature review, I outlined Gee's (1996) distinction between 'discourse' and 'Discourse'. An important feature of the hybridity of the digital vignettes is the use of both 'discourse' and 'Discourse' to present an academic reading of the literacy practices of Kunibídji children. I will be using 'connected stretches of language that make sense' (Gee 1996, p.127), such as the talk around the computer, combined with an academic commentary in English to present a 'discursive' argument about the children's literacy practices. Many of the digital vignettes demonstrate to the reader of the thesis the 'Discursive' practices of Kunibídji children with reference to the Ndjébbana talking books. The non-verbal interactions and the texts displayed by the computer also demonstrate to the reader the children's 'ways of displaying membership in a particular social group' (Gee 1996, p.128). Presented on DVD, my hope is that this thesis will promote a new hybridity that not only integrates academic and Ndjébbana narratives, but also combines 'discursive' and 'Discursive' evidence that demonstrate the literacy practices of Kunibídji children. So my aim of presenting the thesis on a DVD is to attempt to demonstrate Kunibídji children's engagement in the literacy events while presenting an academic argument at the same time.

While the integration of 'Discursive' and 'discursive' elements may have been possible in a printed text, the multimodality associated with new digital texts makes such integration much more effective. The hybridity associated with this multimodality has application when a non-

Indigenous researcher is attempting to theorise Indigenous literacy practices. The multimodality of a thesis on a DVD medium is able to present concise and valid descriptions that are more representative of the literacy events than what could possibly be contained in a printed description of the literacy event.

A paper bound thesis in my view would not just prevent the development of new hybrid texts, it would be a social and technological reduction of my research. Presenting a thesis on a DVD medium, I think, is one way of representing the multimodality that is embodied in the tools and data of this research. Had I represented this thesis in a printed bound form, I would have transformed the digital tools and data into print in ways that may have lost part of their meaning.

The textual composition of a thesis on a DVD is important. Halliday (1994) has identified the three elements of a text to be the field, tenor and mode, which relate respectively to the function of the text, relationships between people in the text, and channels in which the text is presented. If the function of the text of the thesis is to provide an academic argument about the literacy practices of Kunibídji children with Ndjébbana texts, the evidence can be presented more effectively if the relations between the participants are represented with as little distortion as possible. The multimodality of the DVD medium offers an effective way of combining the argumentative function of the thesis with relatively accurate descriptions of the relations between the participants.

Integrating contextual elements of Kunibídji social practices and Ndjébbana language into the academic texts is an effective way that academic audiences can link the participants of the research with academic arguments in the text. Kessels and Korthagen (2001) note that research needs to link abstract rules and generalisations to faces, actions and voices. The generalisations about Kunibídji literacy practices that I am presenting are strongly supported by evidence of the actions around the computer and the multimedia Ndjébbana talking books. I am able to draw upon the tools and data in this research as a way of including actual images voices and texts that the community have regarded as important to construct for their children. As mentioned earlier, the majority of academics who read the thesis will be culturally illiterate to Kunibídji social practices. Contextualising the academic text with Kunibídji social practices is one way of establishing the validity of the academic arguments so that academics can link my generalisations to the people involved in the research.

The digital vignettes can play an important role for members of the Kunibídji community who wish to access the English thesis as well. The digital vignettes provide multiple points of entry for Kunibídji community members who have some understanding of printed English and who may wish to access the academic thesis. Kunibídji community members will be provided with opportunities to link the actions of the Kunibídji children, represented in the digital vignettes, with the conceptual understandings that are presented in English. This will provide interested members of the Kunibídji community with a way of scaffolding their reading of the English text by having contextual elements of video and talking books embedded in the text. These links contextualise the process of documenting new knowledge to members of the Kunibídji community with reference to the actions of Kunibídji children in

the literacy events. Nathan (2000) has suggested that the one-directional form of communication found in print makes knowledge cold and unchangeable to Indigenous people. The multimodality of the digital vignettes in this thesis provides a way of linking participant actions and conceptual understandings and is an attempt at making the final text more readable to the community members who supported this research.

There are several ideological reasons for presenting this thesis on a DVD. Many of the ideological reasons are built on the semiotic arguments that have been outlined above. As the thesis can be viewed as a ideological text, it is important to examine any potential empowerment of the readers and the contributors of the final text. In the following section I will discuss how presenting this thesis about the literacy practices of Kunibídji children on a DVD medium is an attempt to empower members of the Kunibídji community.

The collaborative partnerships that evolved as the research progressed were essential in the production of the Ndjébbana talking books and the digital vignettes of the children interacting with the texts. The value of such Indigenous collaborative partnerships has been noted in the research (Smith 1999). Providing the Kunibídji community members with access to the digital vignettes that were developed as a result of these collaborative partnerships sends a powerful message to Kunibídji adults who supported this research. The collaborative partnerships are more than tokenistic when the participant's access to the final text is considered important in the research. The digital vignettes not only capture Kunibídji interactions in the literacy events but also reflect the collaborative research partnerships that were strengthened between the researcher and members of the Kunibídji community.

Members of the Kunibídji community may also be empowered by being able to read a thesis about their literacy practices. Street (1995) has suggested that literacy practices include social and cultural aspects of the participants as well as their power relations. The technology underpinning the text of a thesis implicitly empowers readers who have the technological literacies to make meaning from the particular form of the text. A paper bound thesis, for example, empowers readers with print literacy and academic literacies, and those readers who can understand English. Embedded in a paper bound thesis is a set of literacy practices that are not congruent with the majority of Kunibídji community members. According to Postman (1985, p.14), 'in every tool we create an idea is embedded that goes beyond the function of the thing itself'. While the paper bound thesis presents scholarly arguments, the process of excluding oral arguments in the text has ideological consequences. The double tracked performance of an Aboriginal oral teller and a non-Aboriginal writer favours the non-Aboriginal Discourse as the dominant text (Eigenbrod 1995). As the tools and data of my research are predominantly oral representations of Kunibídji cultural practices, I need to look for new mediums that can integrate the oral and written texts of Indigenous and non-Indigenous people. A DVD thesis provides an opportunity to present separate reports to different audiences who have different literacy practices. Obviously these reports will be in different languages to the different audiences. Wetherell and Maybin (1996, p.220) suggest that 'language is not a transparent medium for conveying thought, but actually constructs the world and the self through the course of its use.' The language of the report and the literacy practices embedded in the report afford the reading by specific audiences.

The accuracy of the representations of the participants is an important ideological issue. The inaccurate representation of Indigenous people by non-Indigenous researchers in the past has proven problematic, as Smith (1999) has pointed out.

> So, reading and interpretation present problems when we do not see ourselves in the text. There are problems, too, when we do see ourselves but can barely recognise ourselves through the representation. (Smith 1999:35).

A DVD thesis has the capacity to represent the literacy events to members of the Kunibídji community in a form that they can easily understand. The DVD medium also has the capability of linking the digital vignettes to a separate Ndjébbana report for members of the Kunibídji community. This report, which is presented exclusively in Ndjébbana in a multimedia form, is my attempt to promote members of the Kunibídji community 'seeing' themselves in the text. Metalevel understandings of the research process may be promoted amongst members of the Kunibídji community when they have access to a report that reflects their own language and social practices.

I have previously outlined my concerns about reducing Kunibídji social practice and Ndjébbana language to print. Mülhäusler warns of 'reducing Pacific languages to writings' (Mülhäusler 1990), claiming, amongst other things, that 'literacy is seen to reflect the truth' (Mülhäusler 1996). A paper bound thesis would reduce the representation of literacy events of this thesis to a series of writings in English and Ndjébbana. By including vignettes that include digital video and Ndjébbana talking books, I am attempting to show not just describe

how Ndjébbana discourse is embedded within everyday Kunibídji social practice. Since the digital vignettes have been recorded in Ndjébbana, the thesis attempts to promote a linguistic diversity as there is meaningful use of Ndjébbana and English in the same text. So this thesis is an experiment in promoting the oral and written voices of Indigenous people as a way of extending their contribution to scholarly knowledge.

Further justifications for presenting this research on a DVD are highlighted by Indigenous epistemologies. Maurial (1999, p.63) argues that Indigenous knowledge is 'local, holistic and agrapha' (orally transmitted). The form of the digital vignettes of this thesis is a good match to Maurial's (1999) understandings of Indigenous knowledge. This has direct empowerment implications for the two audiences of the thesis. For Kunibídji, valuing the local literacies is a way of giving power to the voices of Indigenous people who are 'outside the development establishment' (Semali 1999, p.104). Valuing oral and written Ndjébbana has been a feature of the Ndjébbana talking books and can also be a feature of this thesis. I am valuing the links that can now be presented between an English academic argument that is backed by oral or visual elements that demonstrate Indigenous designs of meaning. The value placed on attempting to integrate written and oral forms is closely associated with the critical research methodology of this thesis. Presenting a thesis on a DVD, with reference to the above justifications, is my small contribution to enacting social change in the academic reporting of Indigenous researchers by non-Indigenous researchers. Academics need to soak themselves in Indigenous epistemologies which move in different ways to Western Academic impulses (Freire and Faundez 1989). In my opinion, presenting this thesis on a DVD provides a useful

medium for an academic trying to integrate academic and Indigenous knowledge systems in a thesis.

Indigenous academics are another group of people who, hopefully, will also benefit from my research. Recently there has been a call by Indigenous academics to create and control an Indigenous research agenda (Smith 1999; Nakata 2000; Foley 2000; Tsey 2001; Collard & Pickwick 1999). Presenting the thesis on a DVD will hopefully encourage more participation, collaboration, debate and criticism (Collard & Pickwick 1999) of my research by Indigenous Academics. This will be possible because of the transparency of the progression from tool development to its testing and evaluation in my research. Presented in a digital form, my research has the capacity to provide contextual multimedia examples that explicitly demonstrate how I have drawn my conclusions. Indigenous academics will be able to critically examine my research findings with reference to my raw data and the research methodologies embedded in my thesis. Egan (1996) argues that including data in the final texts gives readers the same opportunity to read and interpret the evidence upon which arguments are based. Readers of this thesis can refer to my raw data and come to their own understandings about my proposed literacy practices. This is a measure of the validity of my study.

There may be elements of this digital qualitative research reporting that benefit Indigenous academics as they define their research agenda. Walker (2000) argues that Indigenous research paradigms are needed in order to effectively manage knowledge that reflects Indigenous realities. Some of these realities include interconnectedness, a focus on process,

spiritual experience and a strong relationship with the natural world (Walker 2000). Indigenous academics are incorporating these realities into a valid research agenda and finding ways to share the results with a wide range of community members (Smith, L. T. 1999, p.16). While my research has been carried out from the perspective of a non-Indigenous person, a DVD medium can present to both Indigenous and non-Indigenous people a more holistic representation of Kunibídji knowledge systems than is possible in printed text.

Conclusion

In the above section, I have pointed out the logistical, semiotic and ideological benefits of presenting a thesis on a DVD medium while attempting to maintain respect for participants in the process of reporting the research findings to the participants and academic audiences. As LeCompte and Schensul (1999b, p.45) have suggested, researchers are expected to use tools of research to discover inequalities and to find ways to bring about change in inequitable distributions of power, cultural assets and other resources. Presenting my thesis on a DVD medium, for the reasons outlined above, is justified considering the theoretical position I have used in this study. The creation of the Ndjébbana talking books, the data collection techniques outlined in this chapter, and the justification for presenting the results of this research on a DVD medium, have stemmed from my interest in reducing inequalities in a minority Indigenous Australian language context.

The next chapter presents evidence that will be used to approach the research question. The literacy practices enacted by Kunibídji children in the literacy events that result from their

enjoyment with Ndjébbana talking books on a touch screen computer are outlined. I will be using the digital vignettes as evidence of the literacy practices. I will then outline the relevant theoretical understandings by integrating the findings in a holistic way in the chapter that follows the next. All of the results that are presented in the next chapter can be used to support the theory I am extending as part of this research.

Chapter 4 The literacy practices of Kunibídji children

The literacy practices discussed in this chapter were enacted in the literacy events. As I have outlined in the chapter on literacy, literacy practices include values, attitudes, feelings and social relationships (Street 1993) as well as the simple behaviours of participants in literacy events. The literacy practices that I discuss in this chapter illustrate what I consider to be the Kunibídji children's ways of seeing the Ndjébbana talking books. The themes of access, participation and criticism emerged as important attitudes that Kunibídji children demonstrated throughout the literacy events in this study.

A Desire to Access

Kunibídji children displayed a desire to access the Ndjébbana talking books while I was recording the literacy events with a video camera. My taping of the literacy events was obvious to the children since the video camera was mounted on a tripod above the computer. The recording of the literacy events was part of the technological configuration when the qualitative data was being collected. Regardless of how intrusive the camera was to the children, they repeatedly demonstrated their desire to access the Ndjébbana talking books.

I need to mention that the children's desire to access the texts may have been influenced by the limited availability of computers in this study. There was only one touch screen available at the time of qualitative data collection for reasons I have outlined in the methodology. The children's desire to access the texts on the computer may have been different if there were lots of computers in the community. The children may have not continually read stories on the computer if they knew they could have read them at a later time.

Another factor that may have influenced the children's desire to access to these Ndjébbana texts was the knowledge that there was no guarantee that the computer would continue to operate. As with other technology that Kunibídji children used in their home, the children tend to use the technology while it is working. The children may have thought that the computer was likely to stop any minute so they were accessing the texts while the computer was still working.

The broader social context of the children was another factor that limited their access to the texts. On one occasion a car came past and took most of the children who were around the computer to a football match. Other times some parents of the children would be going home and calling out to their children to leave the computer. So Kunibídji children's desire to access the Ndjébbana talking books near their homes may have been an interesting diversion from other social obligations they had to their family or community.

A preference for the Ndjébbana Talking Books

The Ndjébbana talking books on the touch screen computer were not the only media available to Kunibídji children in the context of their homes. The vignette viewed using the link below demonstrates how Kunibídji children were actively making choices to read the Ndjébbana talking books before watching English videos.

Kunibídji children in this scene were stating their preference for accessing the Ndjébbana talking books over watching a video in English. As the children in this study occupy multiple lifeworlds, I consider the children's desire to access the Ndjébbana talking books as the active choices made by them over other lifeworld activities. The fact that there were always children interacting with the computer when it was available suggests to me that the children placed a positive value on the Ndjébbana talking books. Implicit in such a desire to access these texts is the children's expressed opinion that the activity of using Ndjébbana talking books on a touch screen computer is a 'good one'.

Further evidence of the children's desire to access the Ndjébbana talking books was provided when I began the process of translating the videos of Ndjébbana discourse in the literacy events into English. As I have mentioned in the methodology section, the process of translating the data involved the use of the computer in a collaborative manner between interested members of the Kunibídji community and myself. Due to the presence of the computer, many children were drawn to these sessions thinking they would be able to access the Ndjébbana talking books. The repeated requests by the children and the comments by the parents about how the children enjoyed looking at the stories on the computer was further evidence of their desire to access these texts.

Independent access

While the qualitative data of the video recording of the literacy events provided evidence of the children's desire to access the Ndjébbana talking books at home, the quantitative data of Kunibídji access to Ndjébbana talking books was recorded in my absence. The quantitative

study was designed to gauge the desire by members of the Kunibídji community to access the Ndjébbana texts independent of my presence as a researcher.

The main evidence that shows Kunibídji children's desire to access the Ndjébbana talking books came from the quantitative data collected when three touch screens were located in Kunibídji homes. This quantitative data was generated as the children accessed the computer in my absence in their own homes. While my intention was to provide unlimited access, I realised the children needed to negotiate logistical realities such as social relations and physical settings in order to watch the computer. The children's access to the Ndjébbana talking books on the touch screen computers may have been limited by the absence of electricity in the house, the physical location of the computer, the social relations around the computer and unforseen technical problems, just to name a few. Given these limitations, the children's desire to access the Ndjébbana talking books, as illustrated by the number of screen touches, was clearly strong. The interactions recorded by the computer are shown in table 2.

Location	Dates available	Days available	Number of taps
1	25/11/01-10/1/02	47	76508
2	25/11/01-9/12/01	15	20763
3	23/12/01-10/01/02	18	15209
	Total	80	112,480

Table 2. The results of the interactions with the Ndjébbana talking books displayed on touch screen computers in three separate houses in Maningrida.

While the data was being collected I made regular contact with members of each house to check that the computer was still working and they were happy to continue with the study. The adults of many households told me that for the majority of the time the children were using the touch screens in the homes, with their parents sometimes looking at the stories as well. When the children came to school, usually accompanied by their parents, I was repeatedly informed that the children were enjoying the computer at home. This information was offered without any prompting on my part as a teacher or researcher.

The large number of taps on the touch screen computers demonstrate a desire by Kunibídji children to access the Ndjébbana Talking Books in their own homes independent of any Balanda's understandings about the merits of acquiring Ndjébbana text based literacy. What adds to these results is that the children had had access to the same Ndjébbana talking books

at school for several months before this study took place. This suggests that the results were not influenced by the novelty of the content of the Ndjébbana talking books. As mentioned in the methodology chapter, Kunibídji children had also had access to touch screen computers displaying Ndjébbana talking books in the community, so the technology was not new to them. What was new, however, was their unprecedented access to Ndjébbana texts in their own homes.

Further understandings about the choices made independently by the children are provided by a detailed analysis of the kinds of interactions they made. The 112,480 taps comprised four kinds of interactions with the computer. There were those recorded when pages of a Ndjébbana talking book was turned, others recorded when a book was finished, while others were associated with the turning of the sixteen pages of buttons that represented each Ndjébbana talking book. Every time a button was pressed to begin a new book, the interaction was also recorded. This data is provided in table 3.

Turning the pages of Ndjébbana talking books	66,671
Pressing the button to finish a book	10,585
Turning the pages of buttons, looking for a new book	45,614
Pressing a button that opens a new book	11,214
Total	112,480

Table 3. A breakdown of the kinds of interactions the children were making with the Ndjébbana talking books on the touch screen computers.

There are two figures of importance in table 3. The first is the number of pages of talking books opened by Kunibídji children. The large number of pages suggests the children wanted to access texts in their first language at home using technology that makes the narratives understandable. The large number of pages read by the children suggests the combination of texts and technology used in this study was attractive to the children.

Another reason the pages of the Ndjébbana talking books were accessed so often may have been that the children had control over the literacy events. The children had multiple opportunities to interact with the texts while the touch screen remained in their homes. Several adults in the houses told me that the Ndjébbana talking books were being opened for long periods of time at night. This was confirmed by the data, which recorded the time each

page of each book was accessed. While Kunibídji children had to negotiate certain social and technological practices to access the Ndjébbana talking books in their own homes, in my opinion the children saw the merits of accessing these texts at home.

The second figure of importance is the number of times the pages of buttons were turned by the children. This figure represented 45% of the interactions with the computer. When the children clicked on the button to finish reading a Ndjébbana talking book, they were randomly taken to one of the sixteen pages of buttons. The large number of times these pages of buttons were turned suggests that the children were not just passively selecting the texts but actively searching for stories they wanted to read. I deliberately made a relatively large number of Ndjébbana talking books so that the children would have more than tokenistic choices. Kunibídji children demonstrated that they not only want to access texts in their first language at home, but they also want to access specific texts in their first language, which is only possible when they have access to a variety of Ndjébbana texts.

Limitations to accessing the texts

The desire of Kunibídji children to independently access the Ndjébbana talking books was limited by technical difficulties associated with locating a computer in their homes. As table 3 indicates, the number of days the screen was available was limited in two of the homes. In one house the on/off button on the computer broke which prevented access. As the touch screens were almost two years old when this phase of the study began, the children were not accessing brand new computers. Many of the problems with the computers, however, were greater than simply repairing a broken button. A second computer stopped working because

it became an ant nest. The heat generated by the computer made it a welcome home for the hundreds of ants that invaded the machine eating out wiring in the process.

I entered this study knowing about the limitations regarding the ongoing maintenance of the computers. I also entered this study with a fair amount of scepticism displayed by other teachers about how the children or other Kunibídji community members would treat the computers. An important result of this study was that there was absolutely no evidence of misuse of computers by any members of the Kunibídji community. Instead, the limitations in this study were due to the instability of the computers that were operating in dusty, humid conditions with limited technical support.

The will to participate

When accessing the Ndjébbana talking books, Kunibídji children negotiated a variety of textual and social practices. This section will outline how Kunibídji children negotiated the Ndjébbana talking books during a number of literacy events. The key literacy practice that is exemplified throughout these negotiations is the will to participate in the literacy events with texts in their own language at home.

Ndjébbana talking books were popular amongst Kunibídji children while the video recording was taking place. During the hours of filming, there was never only one child in front of the touch screen computer. Although the children were free to come and go around the computer as it displayed the texts to the children, it was normal for some children to gather around the computer for extended periods of time. Access to the Ndjébbana talking books involved

individual children negotiating with the group of children which books would be read. Bearing in mind that most Kunibídji children cannot independently read printed Ndjébbana texts, the literacy events that I describe below highlight the strength of the children's will to participate in reading texts in their own language at home.

Negotiating the interest in the texts

In the previous section I demonstrated the children's desire to access the Ndjébbana talking books on the touch screen in preference to watching a video. Kunibídji children have also demonstrated their preference for reading Ndjébbana talking books over playing games around their homes. The children demonstrating their preference of negotiating the talking books is shown in the linked video. This video demonstrates the sustained will of the group to participate in reading the Ndjébbana talking books. This vignette was taken 75 minutes after filming began in this session near the children's homes. So the children's attention to the computer was not simply due to the novelty in the first few minutes of access to the texts in this location. Kunibídji children were negotiating the social groups that mediated individual children's access to the Ndjébbana talking books. In order to access the texts, the children participated in the construction and maintenance of a social organisation that made the literacy event an orderly phenomenon.

Kunibídji children use turn taking as a way of maintaining a social order where the demand outweighs the supply of goods and services. A link to the turn taking routines can be seen using the link below. The children take turns at eating the bone so when one is finished with the bone it is passed onto another child who has a turn. Kunibídji children use turn taking as a

way of negotiating a group interest in a resource in short supply. The turns are explicitly stated repeatedly when individuals arrive so they know their position and the rules associated with the 'turns'.

When a touch screen computer was located near Kunibídji children playing at home, many children wanted to have a turn at navigating on the computer. As turn taking is a common social practice amongst Kunibídji children, it underpins the order of the groups that formed around the computer and provided individual children with a way to negotiate the group's interest in the texts.

Evidence of turn taking in family groups around the computer is demonstrated in the video below. In this video the children had two turns, meaning each child could choose and read two Ndjébbana talking books before it was the next child's turn. The frequent reiterating of the order in which the turns would be taken is apparent throughout many of the literacy events in the following videos. Such reiteration of the order of access to the texts provides the children with a relative frame of reference about how long they would have to wait until it was their turn.

There was also evidence of turn taking by groups of children who were partaking in a variety of activities around their home. The video, linked below, demonstrates the precision and order in which these turns were executed amongst the children. Children could move away from the computer once the order of their turn had been established with the group. Even when children went away from the computer they still kept their turn if they could be found at the appropriate time. Being close to the computer or participating continuously in the literacy events was not a way of pushing in and getting an early turn at reading their own choice of book.

The interests of younger children who the group considered to be incapable of independently accessing the texts were also catered for by this turn taking behaviour. Kunibídji children demonstrated a kind of proxy turn taking routine in which the child in front of the computer negotiates with another child who has control over the 'turn'. This is demonstrated at the end of this video linked below.

The command given at the end, ‘You sit there and I will do this last one’, demonstrates how one child is navigating through the books on behalf of another. Such arrangements in turn taking are rather common with Kunibídji children. I have seen this kind of behaviour demonstrated when the children were playing games involving a bat and ball. The younger children’s turns are often taken by older children who can hit the ball with more power or can run faster than the younger children. When reading the talking books, young children often told older children which book they wanted to read when it was their turn. They still had their turn at having the book read, but the negotiation of the text was done by one of their friends at the computer.

The video linked to the button below demonstrates that Kunibídji adults who wanted to read a particular book also exhibited this proxy turn taking. The comment by an adult, ‘I'll be second for kangaroo’, flagged to the child in front of the computer to read the Ndjébbana talking book that was about a kangaroo when the current book was finished. The adult was in fact pushing in front of some other children. I can only presume that part of her justification was to see a book that she made or to see the responses of the children as the book was read. While this adult did not sit in front of the computer, the next text that was read was the kangaroo book. So the turn taking protocol is a not set in stone and is negotiated as part of the specific social context.

When the groups around the computer were small, turn taking still took place. The length of the turns tended to be more negotiable as demonstrated in the linked video. The length of the turn in this case was four Ndjébbana talking books due to the relatively low demand on the texts. The video demonstrates how turn taking was a negotiated process as one child put up the idea of extending a turn to reading five texts and this proposal was accepted by the other members of the group.

By participating in reading the Ndjébbana talking books on a touch screen at their home, individual Kunibídji children were negotiating the group's interest with the texts. Turn taking appeared to be a behaviour that provided the children with a social organisation through which the books were accessed. In order to access the Ndjébbana talking books, most of the children the majority of the time, negotiated turn taking routines. These turn taking routines highlight how literacy is a socially negotiated process when it is acquired by Kunibídji children in a home environment using digital texts.

Negotiating the social interactions

This section will highlight the social interactions of overhearing, overwatching and contributing to the discourse that formed part of the literacy events as the children engaged with the Ndjébbana talking books. The Ndjébbana talking books were mediated not only by the touch screen computer but also by the social group that formed in response to the interest in the texts. Much of the discourse constructed by the children in the literacy events was intended to be overheard by their peers.

An example of one Kunibídji child overwatching and overhearing the Ndjébbana talking books being read by other children is demonstrated in the link below. While there are several children in the video, the movie shows a young child sitting on the lap of her elder sister as she was reading the texts and interacting with the computer. The young child was also overhearing all the comments that her older sister made about the text while sitting in this position. This literacy event demonstrated that access to the texts in this study not only served to reinforce literacy practices with texts, but also served to reinforce family relations and responsibilities. Such findings of overwatching support the work of Harris (1980, p.80) who identified 'learning by observation and imitation' as a traditional Yolngu informal learning strategy. So the children were not just overhearing and overwatching textual practices with texts in their own language, but were also enacting social practices that are integral to being Kunibídji. This particular literacy event is a good demonstration of Luke's (1992) understanding that literacy is constructed by individuals and groups as well as being constructive of everyday life. Both girls were negotiating the text from a social context that

was a normal arrangement in their family. They were experiencing their readings of the Ndjébbana talking books from a familiar Kunibídji ontological position.

The next video shows the children contributing to the discourse around the computer. The will of the children to engage in the discourse with the group in an attempt to influence the next text to be chosen is evident in this video. Individuals presented to the child in control of the computer their choice of the next text to read. The suggestions are presented for the rest of the group to hear as well. The following discourse comes from a segment of the above movie which demonstrates how the children mediated their choices about the next text to view. I have put my interpretation of what the children meant in brackets after quoting what was said.

> crocodile (choose the story with the crocodile in it)
>
> pick the rain one (choose the story about the rain)
>
> no pick the crocodile one
>
> finish that, this mob this mob (don't look at any of those books, look at the book with these people in it)
>
> he got the crocodile one (we are on the page with the crocodile book)
>
> all the little kids (there is the book with all the little kids)
>
> all the little kids are going to fight (in that book all the little kids are going to fight)

I am reluctant to get into a complex discourse analysis due to the nuances of Ndjébbana language and Kunibídji social practice that may have been lost in the process of translating

the discourse from Ndjébbana into English. The point I am trying to make, and which is clearly demonstrated by the video, is that the choices among the texts were mediated by active contributions by the group around the computer. To access a particular text, the child needed to participate in the discourse about which text to look at next. However, the final choice about the next text is that of the child whose turn it is.

Obviously the children moved between roles of contributing and overhearing the discourse that formed part of the dialogue of the group. What the discourse in the above movie demonstrates is that some of the children attempted to influence the participation of their peers in suggesting the next text. Children who overhear suggestions by other children about the best books to read are participating in acquiring the social practices of negotiating which Ndjébbana talking books are preferred by their peers.

The importance of the socially enacted turn taking routine needs to be reiterated as the flow of the discourse in the above movie was dependent upon the maintenance of a social order while also reinforcing and contributing to that social order. Near the beginning of this movie the comment was made, 'I am after Talena'. This comment indicates that the text being read was probably Talena's last story for her turn. The discourse in the above movie makes sense knowing that the children are following a turn taking routine.

The negotiations concerning turn taking routines extended to the adults who often stood behind the group of children. This video demonstrates the contributions by adults who were watching the computer from behind the children as shown in the video linked below. This

video illustrates how the adults contributed to maintaining social order around the computer by critiquing social practices that were not acceptable. An old lady contributed in this way, when one of the children was interfering in another child's turn. She called out, 'Do it properly Njakoyok'. The adult was giving a direct order to the child to wait her turn and not interfere with another child's turn of the computer. Doing otherwise was not regarded as proper behaviour.

Near the end of the video another woman reinforced the turn taking routine by asking, 'Whose turn?' These contributions from the adults were to do with role modelling appropriate behaviour that allows the children to independently access the computer in a group when adults were not present. The children were negotiating what adults consider to be appropriate behaviours. While such behaviour is being learnt around the computer, the children are gaining a sense of respect for fellow Kunibídji citizens. The contributions from adult Kunibídji regarding the behaviour around the computer served as a frame of reference for Kunibídji children about normal Kunibídji social practice.

There was also overwatching and overhearing by the adults demonstrated in the above movie. The adults were making assessments of the benefits of their children accessing Ndjébbana texts near their own homes. As I have mentioned in the methodology chapter, I proceeded cautiously whenever the computer was located near a home and the literacy events were being filmed. The adults in the community were quick to make their assessment of the benefits of the children reading Ndjébbana talking books at home. After a few nights of computer access, I was being asked to bring the computer back for their children to read the

texts. The requests by the adults to have the computer return to their home were the result of their overwatching the social practices around the computer from beyond the range of the video camera, as demonstrated in the above movie.

Due to cultural reasons many Kunibídji adults did not take part in the literacy events around the computer that were recorded on digital video. They were unsure where the images of themselves would be stored and who would be looking at them. Adults did not have a problem with images of their children being filmed. Also adults did not have a problem with interacting with the computer once the video had been turned off. When the touch screens were located in the homes after the qualitative data had been collected, I was told that several community elders watched the children using the computer and, when the children had left, the elders would have a go on their own. So while all the adults did not take part in the literacy events that were video taped, many played a significant role in negotiating with me to have the computer present for their children to read stories in Ndjébbana.

Another important feature of the negotiated process of reading the texts was that listening was valued as an important part of the literacy events. Some contributions by the children were directed at improving how the texts were mediated by the group; for example, by telling their peers to be quiet. This linked video demonstrates the request to listen being made but the request is not well received by the group. The tendency of the children to repeat the requests made by their peers to listen suggests that the children want to actively participate in the social process of reading.

Negotiating the text

Negotiating the text of the Ndjébbana talking books involved negotiating the sounds, pictures and texts as well as negotiating the social context embedded in the texts. These negotiations represent Gee's 'discourse' and 'Discourse' (Gee 1996, p.128). When Kunibídji children were negotiating the sounds, pictures and printed words in the Ndjébbana talking books they were negotiating 'connected stretches of language' (Gee 1996, p.127) or the 'discourse' of the texts. When Kunibídji children were negotiating the memberships embedded in the text, they were exploring the 'Discourse' of the text.

The following movies suggest that the children's choices of texts were based on their understandings of language and knowledge systems as well as their past experiences and family relations. Cummins (1981) has suggested that some language demands are context embedded so that readers and speakers use a variety of contextual cues throughout the text. Kunibídji children have demonstrated in the following movies a strong will to participate in reading Ndjébbana talking books in which the sounds, pictures and texts have strong contextual elements for the children.

A common way the children associated with the 'Discourse' in the Ndjébbana talking books was to identify themselves and their peers in the texts. This video link below provides an example of the children identifying their peers and, in one case, themselves in the text. The contextualisation of the text through the identification of the children's peers was a strong motivation for choosing the texts.

Kunibídji children show a strong will to participate in reading contextually embedded texts in which they are represented by digital pictures as characters in the texts. Using the link below the interest that the children showed in reading a text in which their peers acted as if they were fighting can be demonstrated. An important feature of the text was the identification of the children in the story by Kunibídji names and their anglicised names that are used at school. The children were also identified by their skin names, which classifies the children into one of 16 groups that determines many roles they will take on in the future. The children's will to participate in identifying their peers by skin names and Kunibídji names is another example of older children contributing to the discourse around the computer. Through overhearing this discourse, younger Kunibídji children are provided with the building blocks of a Kunibídji knowledge system in appropriately identifying their peers.

In addition to identifying themselves and their peers in the texts, Kunibídji children also chose contextually embedded texts based upon the voices used in the text. This video linked below highlights the interest of the children in hearing their grandmothers' voice in one of the texts. An important feature of the movie was that the children did not comment on their knowledge that old Betty could not read Ndjébbana printed texts. The will to participate in reading the texts around their own home was partly due to an effective design of the Ndjébbana talking books that afforded a range of contributions by Kunibídji community members in the construction of the texts. Involving many members of the Kunibídji community in the production of the texts provided the children with a range of contextually embedded texts which represented the contributions of close relatives to the readers of the narratives.

The last video link I have included in this section highlights how some of the texts represented the environmental context of Maningrida. In this video one of the children said, ‘listen to the bird’. When this Ndjébbana talking book was being recorded, the parrots were visiting the trees around the house where the recording was taking place.

When you read Njarrabéba Manmoyi, linked below, if you listen hard you can hear the parrots the child is referring to. The comment about the birds demonstrates how some of the children negotiate the Ndjébbana talking books by linking their content to frames of reference within their own knowledge system. The comment also suggests at least some of the children were actively listening and watching the text being read rather than passively overhearing and overwatching.

Negotiating time in the texts

Many Ndjébbana books were reproduced as Ndjébbana talking books for the purpose of this study. Some of these Ndjébbana talking books captured life in Maningrida over 20 years ago. Some of the frames of reference in these books had changed in 20 years and were confusing for the children reading the texts. One example of an older text being reproduced and distributed to the children is presented in the linked video. The children were trying to make sense of the picture in the text but had difficulty because the basketball court depicted on the screen had been moved over the road from the church, and was no longer adjacent to it as in the picture. The children's dialogue about the picture lead to the conclusion that the book was old.

> 'How come the church is next to the basketball?'
>
> 'long time'

Some of the participation in the literacy events was related to eliciting meaning so that texts could be mediated with a current frame of reference that was common amongst the children. Further evidence of this need to validate their frame of reference in the older texts was shown in this video linked below. The activity in this video centred around the children attempting to identify the children who were in the pictures. This video provides another example of the children strongly identifying with the contextual elements in the texts. The older photographs used in the talking books showed that Kunibídji adults did things that the children were doing as part of their daily social practice.

I have already presented evidence that turn taking behaviour was employed by the children to deal with the limited supply of a resource in demand by the children. The turn taking behaviour breaks the access by the group to the Ndjébbana talking books into slices of time in which individuals could choose their own texts. As each turn was measured by the number of books read and chosen, the turn taking behaviour was linked to a linear process of page turning from start to finish of each text.

Evidence of page turning from start to finish of a book is best provided by quantitative data. This field, which can be viewed using the link, presents each page the children accessed as a line of data. Each line lists the book number and page number the children were looking at over a forty minute period. Where the last page of a book is accessed I have underlined the text. From scrolling through the field there is evidence that the children read the books from start to finish as a normal aspect of their turn taking routine.

This result is important as it demonstrates that the children tended to negotiate which texts to read rather than how the texts would be read. Although a turn lasted for the reading of two books, the group negotiations tended to happen only when the texts were being chosen. Once the computer had begun displaying a book, the group tended to support the page turning routine as their preferred choice of organising the way the texts would be read.

The page turning routines are another literacy practice that the children employed to make their participation with the texts meaningful as they read the texts from start to finish. The data suggests that the hypertextuality afforded by multimedia texts may not always be supported by the social practice of those reading the texts. The hypertextuality of the Ndjébbana talking books was more useful in keeping the texts presented in an orderly and predictable manner rather than providing the participants with the option of stopping the text half way through choosing another book. In order for the participants to relate to the hypertextuality afforded by the Ndjébbana talking books while the books were being read, Kunibídji children needed to have a lateral frame of reference to time as part of their literacy

practice. The children, however, clearly demonstrated their preference for a linear approach, reading the texts from start to finish, when groups formed around the computer.

The above results were not just a feature of the above video. I ran a program to analyse the quantitative data recorded by the computer while I was recording the videos. This checked how many books were read right through from start to finish. I found books were read 876 times from start to finish, suggesting page was a normal way Kunibídji children negotiated reading the Ndjébbana talking books.

An implication of the page turning routine is that the children have only a limited time to comment on the sounds, pictures and print that is displayed for each page of the text. Mostly, the children had only a small amount of time to participate in the discourse in the literacy event as the pages were being turned as fast as they could be read. When the children responded to discourse about any page of the text they needed to do it quickly in order to keep the discourse relevant.

Negotiating the multimodality

As exemplified throughout this chapter, literacy events tended to embody a high degree of complexity. This complexity can be seen by the multiple modes of communication that are evident in the interactions around the computer. This video, accessed below, provides a good example of different children having embraced the multiple modalities in the Ndjébbana talking books. The video demonstrates multiple modes through which the children mediate the literacy events.

At the beginning of the movie there is some discussion relating to the choice of text to be read. The comments, ‘Finish this one’, and, ‘put the crocodile one’, suggest that at least one member of the group is not happy with the choice of book of the person in control of the computer. The choice of the book is an important modality that influences participation in the literacy events for some children.

Another modality that is clearly evident in the above movie is illustrated by the child who repeated each single word that was read in the text. She repeated the words in the text as they were read as part of the talking book. This repetition modelled one way of participating in the literacy events, even though she may have trouble independently reading printed Ndjébbana.

Another child participated by extending the meaning of the text by making her own comments about the pictures. One comment, for example, offered about a picture in the text was, ‘this one got sharp fingernail’, another was, ‘They are having tea’. Neither of these comments had anything to do with the printed text in the Ndjébbana talking book. Instead, they were offered to the group as a way of extending the context that was being mediated by the text that was represented in the picture.

Another way children participated in the literacy events was by responding to other children’s comments that were made about the text. An example of this kind of participation was the response, ‘little bit sharp’, that comes after the comment, ‘this one got sharp fingernail’. These kind of contributions serve to extend or verify previous comments made by

the group. So the meanings the children are exposed to in these literacy events come from the text, the comments about the texts and the comments in response to comments about the text.

Some children in the above video, however, remained quiet, overhearing modes of sound from the text and verbal contributions from the other children around the computer. These children were overwatching the text being highlighted as it was read. These children were also overwatching and overhearing the social practices of other children constructing discourse in the literacy events. The poor attendance of Kunibídji children at school would suggest that the opportunities for them to overhear and overwatch the social practice of reading at home is important.

Tinkering with criticism

Some of the Kunibídji children's statements demonstrated their capacity to be critical of the discourse in the literacy events. This section provides examples of the children being critical about violations of page turning and turn taking in the literacy events. This is followed by an examination of some of the Ndjébbana language used in the literacy events and the children's understandings of the content of the texts. This section concludes by presenting the children's use of joking relations in the literacy events as another example of their capacity to be critical of the social practices negotiated while reading texts.

An important point about the criticism demonstrated by the children in these literacy events is that the children are acquiring the capacity to be critical from their peers. In these literacy events they are not learning the abilities to be critical through formal lessons that involve

deconstructing power relations embedded in the social practices of literacy. So in the following literacy events, I propose that Kunibídji children are ‘tinkering’ with criticism. They are testing what works and what doesn’t through experimenting with dialogue amongst their peers.

Critical of normative behaviour

When Kunibídji children violated the norms of turn taking and page turning they were criticised by other children and adults near the computer. An example of this break down in turn taking behaviour is demonstrated in the beginning sections of the previous video as seen below. Bradley, the boy in front of the computer in this film, had begun his turn approximately 15 minutes before this scene was filmed. The comment, ‘Bradley is acting like a Balanda’, that is a non-Indigenous Australian, was offered to the group as an attempt to lever Bradley away from the computer and give somebody else a turn. According to the child who made the comment, the only people who sit in front of computers for a long time are Balandas. The child was comparing Bradley’s behaviour with the ‘other’ social practices of using computers exemplified by Balandas and using this comparison to insult Bradley’s behaviour. The comment indicates how Kunibídji children can unpack other knowledge systems to criticise individuals deviating from normal behaviour.

After the videoing of the literacy events was completed, and the children had been given unlimited access to the Ndjébbana talking books, their engagement with the texts was recorded using quantitative data. Given the frequency with which the computers were accessed, many Kunibídji children were indeed acting like Balanda’s in relation to the above

comment. Given the chance, Kunibídji children would sit in front of the touch screens for long periods of time. I was told by one of the adults that one girl sat in front of the computer for well over two hours in one sitting. Such results suggest that Bradley might not be acting like a Balanda but a Kunibídji who was systemically challenging the turn taking routine in relation to access to texts in his own language.

When Kunibídji children violated the norm of page turning, their behaviour was also criticised. This video accessed by the button on this page shows a child being clearly informed by her mother that she had 'made a mistake' by stopping halfway through reading a narrative and choosing another text. The criticism offered in this instance supported the construction of page turning as a normal social practice in reading Ndjébbana talking books. The girl in control of the computer took this criticism on board since the next text was read from start to finish.

Children's ability with Ndjébbana language

Another way the children criticised each other was in relation to their ability to speak Ndjébbana. This link to the video below shows both adults and children gathered around the computer. In the video there is a recognition by members of the group that the boy sitting in front of the computer was the same boy who read the sound for the Ndjébbana talking book that he had chosen. One of the adults criticises the boy's pronunciation of some of the Ndjébbana words suggesting, 'He made a mistake by not using his neck when he spoke'. By laughing at the words as they are read in the Ndjébbana talking book, children are criticising the boy's mispronunciation of 'ngabarra-yóra' or '(we are) sleeping'.

The mispronunciation, however, needs to be balanced with the desire of the group to want to repeatedly read the book, available with translation using the following link. The suggestion by one member of the group to read 'his' text again would suggest to the child that his contribution to text production in his own language was integral in the popularity of the text. Throughout 80 minutes of videoing in this session, Wékkana was read twelve times. This popularity of the text with the group is probably related to a text being available on computer that has been read by a member of the immediate household.

The word order of Ndjébbana in the talking books was also criticised by the children. A child identifying an inconsistent word order in the text of a Ndjébbana talking book is shown on the following video. When the child came to page six in the book 'Ránba Ka-béna' she pointed out that the words were the 'wrong way' around. Instead of subject-object-verb, which was the order for the rest of the text, this page was presented as object-subject-verb. The child checked her critique by repeating a reading of the page and looking to me for support. In consultation with the other Kunibídji community members, including the child, I changed the word order in the text in this Ndjébbana talking book. An important part of this process was my responding to the child's criticism of the incorrect word order that she identified. Another feature of this process was its demonstration to the community of the soft nature of the Ndjébbana talking books. The sound and the text were simply swapped around by cutting and pasting sections of each line of data. This process was carried out while the adults and children were present so they could verify the corrected text and sound.

Some children also identified their limited ability with Ndjébbana print literacy. In this video one of the children suggested to the child in control of the computer that he read a particular text. The child replied, 'It's too hard for me'. This could be seen as a demonstration of a child knowing his own inability to read printed texts in his first language. The child may have been inferring he had previous negative experiences of trying to articulate this level of Ndjébbana printed text at school. Another way of interpreting the critique of his own ability is that he may have wanted the process of reading Ndjébbana around his home to be a non-threatening experience. The desire to access the Ndjébbana talking books may have been due to the texts not being threatening to the children. In fact, the repeated passion demonstrated by Kunibídji children to want to read the Ndjébbana talking books on the touch screen computers may have been due in part to their being able to make sense of the texts without a cognitive overload. This child may have been just pointing out that the books he chose to read around his home were those that did not threaten his limited ability with Ndjébbana print literacy. Another interpretation of the comment may be that the child demonstrated an avoidance behaviour to reading the Ndjébbana talking book due to the characters in the text. There may have been a myriad of relations that were embedded in the text of the Ndjébbana talking book that was to have been chosen. The child may have been using his excuse about his limited ability with language as an excuse to avoid dealing with a set of relationships.

The content of the texts

Along with their critique of the language, Kunibídji children were critical of the content of the Ndjébbana talking books. In this video linked below the children engage in a discourse not about the text but about the picture. One child questioned the way a small animal could 'shit' such a large egg. The question was repeated and then met with the response about 'talking the wrong way'. Realising that I may be making sense of this Ndjébbana discourse, the children then switched to another language, Burarra, in which one of the children claimed, 'We are all mad'. What began as a question about a picture in a text ended with at criticism of the contributions that were stimulated by the picture. The children demonstrated an ability to code switch between languages in which they offered a critique about themselves as being mad. The discourse changed in a split second when the book reading stopped and choices were then offered about the next text to read.

The video provides evidence that Kunibídji children did not passively accept the content of the Ndjébbana talking books. When something in the content of the Ndjébbana talking books conflicted with their understandings, a discourse sometimes developed in which they challenged their limited understandings with the rest of the group. Reading the Ndjébbana talking books provides Kunibídji children with the opportunity to openly question how the texts conflict with their understandings of the world.

Participating in the reading of the Ndjébbana talking books provided the children with opportunities to reflect upon their thoughts and feelings about their world with the group. This video, accessed below, shows one girl testifying that, ‘I love that one’, referring to the Black Lip Oyster in a picture in the book. The next comment by a different child identified the quality of the particular oyster in the photograph. Both these comments added to the contextualisation of the text for the contributors. The first comment contextualised this page of the Ndjébbana talking book with reference to a personal love for oysters. The statement that followed contextualised the page of the text with reference to the subject and the object. The comment, ‘Samuel has a sweet one’, demonstrated that the child knew the person as well as the quality of the food in the picture. So the discourse that was presented in this literacy event was built upon previous contextual elements that were offered about the pictures or the characters in the story.

The children who overheard this discourse were not only acquiring an understanding about what makes a ‘sweet’ oyster, they were also hearing personal attitudes being contributed to the discourse about the text. The overhearers were also exposed to the positive way a personal attitude can be received by the group. The line, ‘Samuel has a sweet one’, reinforces the view that the oyster in the book was ‘sweet’, qualifying the previous statement. Where the literacy events with Kunibídji children included a discourse of the children’s personal attitudes, the literacy events became the building blocks of the children’s critical awareness about texts.

A critique of the content of the text in relation to the relevance of the text to the children's social practice was also demonstrated in some of the literacy events. This video shows that some children were not prepared to let references in the texts slip by without highlighting their social practices with reference to the text. By talking about how the oil from a dugong is used in washing hair, this girl was adding an oral commentary to the texts that complemented the content of the Ndjébbana talking book.

The page turning routine adopted by the children limited much of the criticism in the literacy events. Any critiques of the text or previous comments were mostly limited to the one liners offered as the page was being read to them. In this case, the comment offered by the child about using dugong juice for her hair was immediately followed by, 'who likes you?' This comment was not in reference to the previous comment, but was made in relation to the large amount of food one child was eating nearby. So it was not only the constant page turning that limited the critique of the text or social practice around the computer, but also the social practices that were taking place around the computer that were independent of the text being read. In this case, the discourse about the social practices of dugong juice and hair was diverted due to interest in the piece of meat that one child was eating during the literacy event.

The above video demonstrates that, within the literacy events of Kunibídji children engaging with Ndjébbana talking books at home, participants may critique both the text and the social practice around the text. Contributions offered by the children to the Discourse around the computer may amount to attempts at making the texts more meaningful for themselves and

the rest of the group. There is an attempt to rewrite the printed narrative through oral contributions which are grounded in the social practices of the children. Considering that the original texts of many of the Ndjébbana talking books were designed to promote print literacy amongst Kunibídji students, the rewriting of these texts with reference to the social practices of the children appears quite logical in the context of their homes.

Joking relations

Another domain of criticism that is exemplified in the literacy events were the joking relations between the children that were interwoven into the texts. Joking relations have been characterised by Radcliffe-Brown (1952, p.90) as 'a relation between two people in which one is permitted by custom to tease or make fun of another person who is required not to take offence'. Joking relations have been demonstrated to exist among speakers of other Indigenous Australian languages (Garde 1996).

In the context of this study, due to the relatively rapid page turning, a person presenting a joke would have to have internalised the content of the text with reference to their social practices. The children's knowledge about the context of the text may come from previous readings or this knowledge may have been internalised as the text was being read. Either way, when a joke is told in relation to the text, Kunibídji children are demonstrating a critical awareness about the content of the text. This critical awareness about the texts is exemplified in the movies referred to below.

Joking relations in the literacy events were used by the children in an attempt to control the normative behaviour of the group. This video, linked below, was taken as the children were trying to decide which book to look at next. Amidst the discourse one of the children joked that ‘Whoever is laughing has this turtle for his wife’. The child immediately in front of the computer said this as the computer was displaying the button for the turtle book where a picture of a turtle was clearly visible.

This interjection may be seen as an attempt to control the discourse around the computer and influence the choice of the next text. Eleven minutes later, when the turtle book was being read, the discourse about laughing was more defined. In the video linked below, the same child was still in front of the computer suggesting that people laughing were ‘laughing at his (Harold’s) father now’. The next comment, ‘I will bash up the person laughing’ is more a demonstration of respect for the old man reading the book than a threat that will be executed. The threat to bash someone up was never carried out even though the laughing did continue. The child negotiated the tension between respecting an old man who voiced the names of the turtles and seeing the humour of the strange intonation he used when saying the names of the turtles. He handled the situation by establishing joking relations amongst the children.

Another demonstration of joking relations around the Ndjébbana talking books reinforces Turkle's (1995) view that some computer users take a new identity when interacting with the computer in certain ways. The video accessed by the button below, an example of one child joking about another's identity is provided. Keenan is portrayed as a hero because he was repeatedly represented in a book as being able to collect and catch a large variety of food on a school excursion. A joke about his identity is offered, 'Keenan thinks he is a hero'. The joking relation continues with the comment, 'Keenan is mine, come kiss me'.

In this video the boy in the picture in one of the books is publicly ascribed a new identity by the girl reading the text. This same girl then made a joke about her relationship with this new identity of the character of the text. This is another example of the children's ability to rewrite the texts through oral narratives that attempt to capture the interests of the children reading them. In this example, creating a fantasy about the character in the text and then joking with this fictional character serves to capture the children's interest. This demonstrates the children's ability to manipulate the theme of the pictures of the texts and to create a subtle oral commentary about new themes that emerge as the pages of the Ndjébbana talking books are read. In this way the children showed their ability to rewrite a narrative about the text that matched their social interests.

Through these joking relations that the children overlay on the Ndjébbana texts, they were tinkering with the social fabric of kinship relations. The literacy events associated with Ndjébbana talking books provided an opportunity for Kunibídji children to play with their understandings of respect that are an integral part of Kunibídji ontology. The mediation of

the Ndjébbana talking books through these joking relations demonstrates the children's ability to critique the texts and their social practice. Such opportunities for mediation would appear useful for Kunibídji children to practice the intricacies of an ontology that is unique to the Ndjébbana speaking community.

Conclusion

Before these findings were presented I based the justification for providing Kunibídji children with opportunities to access Ndjébbana talking books at home on theoretical arguments associated with linguistic human rights. The engagement demonstrated by Kunibídji children with the Ndjébbana talking books provides evidence of their choice to engage in literacy events with these texts at home. So there are now theoretical and practical reasons for distributing the Ndjébbana talking books on touch screen computers in Kunibídji homes.

Kunibídji children have shown a continuum of engagement in the literacy events with Ndjébbana talking books from overhearing and overwatching to criticising aspects of social practices they consider to be unfair or inappropriate around the computer. Kunibídji children have also demonstrated the capacity to strongly identify with the people, places and social practices that are embedded in the texts as well as the sounds of community members reading the texts. Kunibídji children have shown they can construct alternative narratives about the texts that make the literacy events a more meaningful experience than passively reading the text written by other people. The children's ability to criticise elements of the text and social

practices associated with literacy events in a context of low school attendance has implications that need to be further explored.

Street (2001, p.11) has suggested that literacy practices include the ‘folk models of the events and the ideological preconceptions that underpin them’. The evidence from this research suggests that Kunibídji children value access to Ndjébbana talking books at home on a touch screen computer as a literacy practice. The social practice of negotiating the literacy events with Ndjébbana Talking Books and making links between the content of the texts and their ways of seeing the world is also highly valued by the children. The children’s control of the time and space of the literacy events appears to be a vital ingredient in the pleasure they take from reading the Ndjébbana Talking Books. In the literature review I outlined that a humanising Praxis is the result of humans pursuing their ontological vocation of becoming more fully human 'through dialogue with others in a critically conscious way' (Roberts 2003, p.174). The children have demonstrated their capacity to critically comment on normative behaviour, extend their joking relations through the literacy events and critically analyse the content of the texts in this study. This would suggest that reading of the Ndjébbana Talking Books is a humanising Praxis for Kunibídji children.

The next section investigates the implications of these findings for literacy practitioners who may benefit from my interpretation of what these findings mean.

Chapter 5 Implications of this study

The implications of this study are presented in three sections. The first section identifies the elements of this study that may be worthy of consideration in other minority Indigenous Australian language contexts. The second section deals with implications that are directly related to ways of improving teaching and learning in the Ndjébbana Two-Way Learning Program. This section frames the results of this study with reference to the social practices of Kunibídji children and the secondary Discourses of the school. The third section proposes some future research that, in my opinion, may benefit members of the Kunibídji community. Questions that have emerged from this study are framed by a critical approach to research that challenges the continued systemic marginalisation of members of the Kunibídji community.

Implications for other minority Indigenous Australian language contexts

There is no guarantee that the children's engagement with touch screen computers in Maningrida would be replicated in other Indigenous Australian language contexts. The children's engagement, demonstrated in the literacy events in this study, might not be directly applicable to other Indigenous Australian contexts. Embedded in the literacy events were specific kinds of texts, technologies and social practices designed to accommodate the engagement of Kunibídji children. The content of the Ndjébbana talking books, for example, probably has limited scope in supporting social practices outside Maningrida.

On the other hand, the methodological elements of this study may have application to learning, teaching and research in other minority Indigenous Australian language contexts.

The elements listed below may be used as signposts for people exploring innovative uses of technology in similar contexts. Osborne (2003) has used the metaphor of a signpost for describing aspects of culturally relevant pedagogy that teachers and preservice teachers might engage with through a praxis. The concept of the signpost is a useful way of raising the awareness amongst teachers and researchers about the literacy issues involved in a minority Indigenous Australian language context. The signposts are used to outline the main points of departure taken along the path of researching minority Indigenous Australian language contexts. The signposts listed below are provided for educators who are attempting to design and use technology to support a minority Indigenous Australian language.

Signpost 1. Supporting the linguistic human rights of the participants.

One of the explicit assumptions behind this study is that the linguistic human rights of speakers of minority Indigenous Australian languages should be upheld in changing technological and social times. Just because many Indigenous Australian children choose to speak a minority language does not mean that they should miss out on opportunities to access texts in their first language at home on new technologies. Part of every child's human right is the choice to speak their first language at home. As a speaker of English I have taken this access for granted. New technologies have been available to me to extend my use of English. I can use the internet and new versions of software and computers using my first language at home. Linguistic majorities take it for granted that their education will be in the medium of their own language (Skutnabb-Kangas 2000).

Many forms of new technologies support the linguistic human rights of linguistic majorities. An important methodological aspect of this study, that may be applicable to similar contexts, involves the search for innovative ways of using new technologies. This study has demonstrated how technological innovation might be deployed to support extending the linguistic human rights of speakers of marginalised languages. Holding the linguistic human rights of Indigenous Australians as paramount is an important ethical approach I have found useful in this study. As a consequence, changing technologies need not be associated with the use of only majority languages.

Pinker (1994) has suggested that 'the loss of a language is part of a more general loss being suffered by the world, the loss of diversity of all things' (p.261). This study is an example of not only protecting part of the world's diversity, but also extending the diverse ways a minority Indigenous Australian language can be represented and used by its speakers.

Signpost 2. Upholding a professional approach to teaching.

Teachers of Indigenous Australian students are paid to teach. As professionals, teachers are paid not just to deliver a lesson or set of activities, they are paid to improve the educational opportunities of their students. Particularly in remote communities, teachers are paid to do a difficult job.

One of the reasons teaching is difficult in Indigenous Australian contexts is the complexity and diversity of the problems the teachers face. Nakata (2003, p.12) suggests that 'the complexities of teaching literacies are evident in classrooms everywhere, and the

particularities of diverse Indigenous contexts inject additional complexities into the task of teaching'. The problems of teaching in a minority Indigenous Australian language context are not easily solved. In my methodology chapter, I outlined how this study began as an existential problem and became an epistemological problem. The initial existential problem was that there were no Ndjébbana books at home for Kunibídji children to read. It became an epistemological problem as I realised I did not know whether Kunibídji children wanted to read Ndjébbana texts at home. The thesis has attempted to gain insights into just one problem with one group of children belonging to one Indigenous Australian language group. Due to the diversity and complexity of minority Indigenous Australian language contexts, there are many gaps of epistemological knowledge that impact on the effective practice of teachers of these marginalised students.

My understanding is that teachers need to tackle the issues arising from the diverse and complex learning environments with a professional approach to teaching. An important feature of the professional approach to teaching is the ability to establish and maintain a dialogue with community members and to establish the most effective praxis given limited resources. I realise that the concept of a 'professional' is extremely diverse and is often associated with elitisms and exclusion. I am using the term 'professional approach to teaching' in a very different sense and associating it with the attributes that are typically regarded as characterising the 'best' forms of teaching practice. A professional approach to teaching will include issues of engagement, empathy and social justice. A professional approach to teaching marginalised Indigenous Australian students will help teachers overcome the potential for the cynical and apathetic attitudes which may creep into the

profession in remote communities. A professional approach to teaching will focus on filling the epistemological gaps with evidence. Many good teachers already demonstrate the above principles in their everyday teaching practice.

I have attempted to incorporate a professional approach to my teaching of Kunibídji students. I believe I have demonstrated in this research that I can learn while teaching the children. In my opinion, students learn best when the teachers also continue to learn. One way teachers and students can learn together in many minority Indigenous Australian contexts is by researching real issues that will provide knowledge about effective teaching and learning practices for groups of Indigenous Australian children. Non-Indigenous and Indigenous participants of the Ndjébbana Two-Way Learning Program would benefit from not only sharing knowledge and cultural understandings but also by forming collaborative research partnerships aimed at finding better ways of teaching and learning.

The sort of knowledge that needs to be documented may include whether children want to read texts in their own language at home. Knowledge about how the children make meaning of their world, particularly at home, is also worth researching. School programs could be designed to reflect the literacy practices of the students when they begin attending school to engage the students in learning. Little is also known about the possible pedagogical implications of the changing technological situation of many minority Indigenous Australian language contexts. Little is also known about how gaining the kinds of knowledge listed above can provide authentic learning and teaching experiences for students and teachers. The

process of documenting such knowledge would provide the students and teachers with ample opportunities to develop a metalevel awareness of their learning environment.

I have taken a two-fold approach to new technologies in this study. First, I have challenged the limited access that speakers of minority Indigenous Australian languages have to new technologies. I have repeatedly emphasised that teachers of such students should not accept the designs and use of new technologies that are simply borrowed from non-Indigenous Australian contexts. Teachers need to be critical of the implicit support provided for majority languages offered by many configurations of new technologies that are used with students who speak minority Indigenous Australian languages. Second, I have attempted to document the knowledge that is associated with new technological configurations in a minority Indigenous Australian language context. The process of seeking this knowledge is closely tied to a professional approach to teaching. It assumes teachers want to make informed educational decisions that are based on evidence.

Without knowledge of the educational context, teachers of Indigenous Australian students might overlook accepted practices that are typically based on assumptions about non-Indigenous knowledge systems which contribute to the students' marginalisation. One of the problems I have with the bottom up approach to literacy outlined by Street (2001), is that it has a tendency to reproduce the marginalisation of the participants simply by focusing on their everyday social practices. For example, I could have studied the everyday social practices of the preschool children I was teaching. I could have recorded the literacy events the children designed and controlled at home. I could have then attempted to integrate their

literacy practices into the literacy events in my classroom. Instead, I hypothesised that their lack of access to Ndjébbana texts at home contributed to their disengagement with school. My research also suggested that the children were marginalised not only by their lack of access to texts at home, but also by the hegemonic literacies embedded in the texts they were reading at school. By researching the literacy practices enacted in the literacy events of the children engaging with Ndjébbana talking books, I removed some of the marginalisation the children faced at home. I researched the participants' literacy practices when they were provided with educational opportunity since they were able to engage with texts in their own language. The literacy practices that were documented by me were of a transformative nature in a context of improved educational access to relevant learning.

As professionals, I would argue that many teachers have the capacity to make positive contributions to literacy events that children experience in their community. This is particularly the case for teachers of minority Indigenous Australian language students. Teachers should be researching pilot programs of literacy practices where the marginalisation of the students is reduced through some form of teacher intervention. The evidence provided by such research could be used to formulate effective community owned policy at the school level.

Principals of schools in remote communities, as part of their professional responsibility, need to ensure that teachers have adequate opportunities to continue their professional development. With issues of high staff turnover and changing technological configurations being associated with remote Indigenous Australian schools, principals should take this role

seriously. Hughes (1993) reported that in South Western Queensland professional development and support for principals and teachers has become essential to the provision of computer equipment and access to it, particularly where there is high staff turnover. Principals of remote Indigenous Australian schools should foster the use of technology to solve authentic problems and to document understandings about teaching and learning in such communities. Teachers in such contexts would not just be acting as technicians delivering the curriculum but extending their professional understandings about managing challenging and dynamic learning contexts.

Before I introduce the next signpost, I need to mention how a professional approach to teaching can support non-Indigenous teachers working with speakers of minority Indigenous Australian languages. Non-Indigenous teachers working in such contexts need to be prepared to work outside their knowledge system. Non-Indigenous teachers work with Indigenous Australian students in a space where two knowledge systems are operating. This common space of overlapping knowledge, ideology and cultural understandings may be considered a 'third space'. According to Bhabha (1994, p.37) the third space 'constitutes the discursive conditions of enunciation that ensure that the meaning and symbols of culture have no primordial unity or fixity, that even the same signs can be appropriated, translated, rehistoricized and read anew.'

Non-Indigenous teachers in Maningrida are working in a third space in which elements of Indigenous and non-Indigenous knowledge systems overlap. In this study, for example, the work of creating the Ndjébbana talking books combined the meanings and symbols of both

knowledge systems. Non-Indigenous teachers need to recognise that children can make powerful and novel decisions about their own language and knowledge systems in a third space. As I have demonstrated in this study, non-Indigenous teachers can also report the results of their interventions in the third space, be they engaging or disengaging for the participants, as a way of formulating school policy. The negotiation of new social practices and knowledge systems by teachers and students in a third space 'leads to the tensions and achievements of growth and change' (Snyder 2002, p.180). I hope that I trod carefully and reported wisely while in the third space with Kunibídji children.

While I like Bhabha's (1994) concept of 'third space' as a useful metaphor for conceptualising overlapping knowledge systems, I find Gee's concept of 'Borderland Discourses' an appropriate way to describe the ideological aspect of the work of teachers in remote Indigenous Australian communities. Borderland Discourses are 'discourses where people from diverse backgrounds, and, thus with diverse primary and community-based Discourses, can interact outside the confines of public-sphere and middle-class elite Discourses' (Gee 1996, p.162). In order for teachers to solve many of the day to day problems facing their profession in remote communities, they need to interact with the local community outside the confines of the secondary Discourse of school. Effective teachers who work in the Borderland Discourses of Indigenous Australian communities need to be competent researchers. Kincheloe (2003) has identified the merits of teachers acting as researchers as part of their praxis. For non-Indigenous teachers, part of their research will involve designing and building third spaces where children can speak. Another part of this research will be examining 'ways of listening to what (children) have to say' (Nakata 2001,

p.348). In this study I have presented the voices of Kunibídji children negotiating new technological literacies as part of their primary Discourse. Their voices command a teaching praxis that will lead to improved educational opportunities in their homes.

Signpost 3. A pragmatic approach to texts.

One of the features of this study that may be applicable to other contexts is the pragmatic approach I took to the Ndjébbana texts. Carspeckan (1995) suggests that pragmatic models of social texts emphasise language use or language mediation. I have taken a similarly pragmatic approach to texts in this study. Through this approach I have attempted to improve the accessibility of the content of the texts to the participants by using new technologies that integrate sound, printed texts and image of the same message. The pragmatic approach to texts I am referring to in this section emphasises the social acts of meaning making through texts and through the social interactions as the texts are being read. An important feature of this pragmatic approach to texts was the attempt to use texts to reduce the social and linguistic marginalisation of the participants. Where resources are limited in many minority Indigenous Australian language contexts, a pragmatic approach to texts will provide the participants with immediate meaningful choices concerning the merits of engagement with the texts.

A good way of framing a pragmatic approach to texts is by mapping the technological literacies of the participants. Bruce (1998) has identified a chronology of technological literacies that have developed over time in a global First world context in the following way:

➔Primitive symbol systems

➔Complex oral language

➔Manuscript literacy

➔Print literacy

➔Video literacy

➔Digital/multimedia /hypertext literacy

➔Virtual reality

The evolution of technological literacies proposed by Bruce (1998) is associated with the dominant literacy practices of many privileged speakers of majority languages in affluent societies. Kunibídji children have a different history of technological literacies to that presented above. A chronology of technological literacies used by Kunibídji children highlights this difference.

My understanding of the chronology of Kunibídji technological literacies associated with Ndjébbana in home environments is as follows:

➔Complex oral language, ceremony, cultural artefacts, symbols (Kyle-little 1975; Doolan 1989)

➔Ndjébbana print literacy began in 1975 (Mackay 2000)

➔Multimedia literacy with talking books (Auld 2002)

The difference between the global evolution of technological literacies outlined by Bruce, and that outlined for Kunibídji children, highlights the need for an approach to texts based on

language use and language representation. Rather than force Kunibídji children to fit global technological literacies in their home, designs of texts that are 'socially relative' (Feenberg 1995, p.3) are important when introducing new technologies. The Ndjébbana talking books, for example, included a large amount of content that had been collected over time by members of the Kunibídji community. The technological literacies of oral and printed Ndjébbana were integrated into the Ndjébbana talking books in a complementary manner so the texts could be decoded for members of the community who could not read.

The marginalisation of the participants over time is also exemplified by lack of access the participants have had to new technological literacies. The slow evolution of technological literacies for Kunibídji children can be explained by their remote location, language and knowledge systems. The history of contact of members of the Kunibídji community with invading forces is also represented in the above technological chronology. Tusting (1999) has suggested that literacy is historically situated, meaning that literacy practices are associated with a particular history of the society in which they are instigated. The marginalisation of members of the Kunibídji community is reflected in the slow rate of evolution of their technological literacies. Printed Ndjébbana, for example, was only introduced to Kunibídji children after 1975.

A pragmatic approach to texts, as outlined by Carspeckan (1995), implies that new technological literacies should be used to support meaningful and empowering use of language by the participants. As I have mentioned in the first signpost, the use of new technologies can be closely associated with the linguistic human rights of the participants.

The pragmatic approach to texts empowers the participants with choices about the kinds of technological literacies they have available to mediate their minority Indigenous Australian language. An important feature about the choices available to the participants in a pragmatic approach to literacy is that their literacy practices are embedded in the ways the texts are used. The use of the talking books on touch screen computers at home in this study, for example, afforded group readings of the texts in which everyday social practices were brought to the literacy events. The pragmatic approach to texts matches the use of the texts to the social practices of the participants, rather than expecting the participants to match specific technological literacies of the text.

In this research, the participants were constructed by the researcher as 'dynamic, open and forever undergoing transformation' (Cope & Kalantzis 2000, p.205). The process of framing Indigenous Australians as 'masters of transformed practice' (Nakata 2000, p.119) is evidenced in the search for the new technological literacies that can be used to mediate texts in their threatened language. On the other hand, a pragmatic approach to texts also regards the participants as free agents who can choose between destinies offered by different technological literacies. If some participants have decided that particular technological literacies are not part of their future, the language programs at the school need to reflect this decision made by those people.

The process of introducing a new technological literacy to speakers of minority Indigenous Australian languages is one of negotiation. Teachers should not have a deterministic approach to texts such that the texts are expected to determine the social practices of the

participants. In this study, for example, children were provided with choices to engage in literacy events with texts. The children in this study were in control of the process of negotiating the social relevance of the Ndjébbana talking books. In doing so, they were also negotiating the role multimodal digital texts might play as a part of their primary Discourses. The pragmatic approach to texts taken in this study supported the investigation of bridging primary and secondary Discourses of the participants with new forms of texts. Such an approach is likely to be relevant to research in a number of language contexts.

Signpost 4. Building alternative technological configurations

Another methodological concept offered by this study that may be relevant to other Indigenous Australian contexts is the bottom up approach to building technological configurations. A feature of these technological configurations is the combination of the pragmatic approach to texts with spatial and temporal uses of technology that have support from the community. The technological configuration in this study afforded the community with access to new literacy events with new forms of texts.

As I have demonstrated in the figure 1, other elements of technology can be seamlessly added to the technological configurations that promote literacy events in order to record community engagement with the texts. In this study, for example, a video camera was added to the technological configuration of the Ndjébbana talking books that were displayed on a touch screen computer outside the homes of the participants. In previous studies (Auld 1996) I have outlined the benefits of using the computer to record the interactions of the

participants with the computer and to display the texts to the participants at the same time. This methodological approach was also useful in this study.

The results of this study demonstrate the potential benefits of developing technological configurations in a minority Indigenous Australian context to fit the primary Discourse of the participants. This approach to technology is often in contrast to that of the school which typically expects the social transformation of students to fit the configurations of technology that are ascribed as part of a secondary Discourse. I transformed the on-line use of computers in common use in the school to build a technological configuration that I expected would have some currency amongst the children at home.

My approach to the distribution of the Ndjébbana talking books, for example, centred on providing the community members with access to the texts that they had collaboratively produced with me. I used an Apple operating system, as it came with software which provided the children with access to only the Ndjébbana talking books. While I have promoted the children's experimentation with technology during the production process, the texts were distributed in a way so the children could access the texts only. The limited access the children had to the computers ensured that the reading of the texts was not interrupted by errors that would emerge if the children had access to the operating system.

There was hardware as well as software considerations with the distribution of the Ndjébbana talking books. The imac computer was an all in one unit, with the monitor and processor together like a television. Consequently, when the computer was moved there was only one

power lead to disconnect and reconnect. The use of the touch screen was another feature, made possible with this type of computer, which promoted the distribution of the talking books in the children's homes. The hardware used in this study was resistant to the dusty conditions in which the touch screen was to operate.

I have outlined the hardware and software of this technological configuration simply as a way of demonstrating that my methodology was one of taking risks. I was experimenting with new kinds of technological configurations in an attempt to improve access for the participants to texts in a threatened language. The purpose of establishing this new configuration was to gauge whether the children wanted to read. The configuration I used in this study was therefore directly related to the research question.

An alternative technological configuration to that used at school was necessary, given the context and the potential capacity of the technology as a tool of communication. Ihde (1979) suggests that technology can amplify and reduce different modes of communication. Warschauer (2002), on the other hand, suggests that technology can amplify different kinds of interactions. This study experimented with new modes of Ndjébbana communication, which could support interactions amongst groups of Kunibídji children. The point I make is that, if technology can amplify different modes of communication, and language is one of those modes, then technological configurations can be constructed to implicitly support threatened languages. A measure of the success of these technological configurations is their capacity to amplify interactions that reduce the participants' marginalisation.

I am not suggesting that the myriad of problems facing speakers of minority Indigenous Australian languages will vanish through innovative uses of technology. What I am suggesting is that technological configurations should reflect how knowledge is transmitted through networks of relationships, rather than in books or by discrete individuals (Gee 2000). If knowledge transmission were a large focus of the Ndjébbana Two-Way Learning Program, Ndjébbana texts would be produced with this purpose in mind. The relationship between the author and the reader is often lost in the current method of Ndjébbana text production in the Ndjébbana Two-Way Learning Program. The program would only benefit with a shift in focus from the finished product to the transfer of knowledge supported by reading the texts. As I had mentioned in the methodology, many Ndjébbana texts were not readily accessible for Kunibídji children to read. The results of this study suggest that technological configurations can be established to promote the transfer of knowledge in a context of meaningful social practices. In minority Indigenous Australian language contexts, alternative technological configurations to those currently supported by most schools, need to be established with the specific intention of promoting the linguistic human rights and educational opportunities of the participants. This study has clearly demonstrated that these technological configurations can be as simple as placing a computer on a mat outside a home, with an emphasis on connecting the author with the readers.

As part of a professional approach to teaching, teachers of Indigenous Australian students should have the capacity to become producers of innovative technological configurations in partnership with children and members of the local community. Teachers in such contexts should be willing to experiment and take risks rather than simply consume technology from

other contexts. Teachers should have the ability and willingness to develop technological configurations that are designed to fit a local context. As well as establishing these configurations, teachers should be able to evaluate their effectiveness at engaging the children in literacy events. Feedback on the literacy practices enacted in the literacy events with these technological configurations will provide understandings in the school about the merits of a specific configuration. As part of the professional approach to teaching, teachers should feel comfortable building these configurations in their classroom as well as in the community. Teachers should not be bound by the space of their classrooms but should experiment with the kinds of configurations that work as borderland Discourses in remote Indigenous Australian contexts.

Teachers should also not be daunted by the complex issues of maintaining access to emerging technological literacies in remote Indigenous Australian communities. The issues of dust and ants will be a challenge for the use of any technology in many remote Indigenous Australian communities. These challenges might be tackled by focusing on innovative strategies to supply rather than maintain computers in such contexts. Developing a network to distribute the many computers that are being tossed out in Australian government agencies and industry in larger towns to homes in remote Indigenous Australian communities could be more effective than trying to maintain computers where dust and ants will probably always win. The focus could then be drawn to the engagement and development of literacy practices rather than the maintenance and establishment of the objects of technology.

Signpost 5. Supporting family literacies

As outlined in the literature review, Buckingham and Scanlon (2003, p.191) consider that the family is perhaps the most significant location of children's learning. The findings of this study support the importance of family and peers for the children's learning in Maningrida homes. The texts were also important. The Ndjébbana talking books were contextualised with the everyday language and social practices of the participants. The number of texts that were created demonstrated to the participants that their language was worthy of archiving and distributing on new digital technologies. The texts were distributed in a way that was not invasive. Members of the Kunibídji community could freely participate in the literacy events as passive consumers of the texts or as active contributors in the negative process.

In the second signpost, I have previously mentioned the need for teachers to establish and maintain a dialogue with the community members as part of their professional approach to teaching in Indigenous Australian contexts. In doing so, teachers should not overlook the important role family literacies play in establishing the parameters of the children's learning. In minority Indigenous Australian language contexts an integral part of the work of a teacher should be 'trying to understand the context-specific ways in which the practices of reading and writing occur outside of schooling' (Mpoyiya & Prinsloo 1996, p.177). Where community approval has been given, teachers should be encouraged to extend their students' access to literacy events with new technologies at home. Doing so would provide community members with opportunities to evaluate the possible benefits of these technologies being integrated into the family literacies. Parents may become aware of the possibilities of new media with reference to the language learning conducted at school. Children can develop

their social practices of negotiating new literacies. The everyday social practices of the community can be reinforced as being worthy, as far as the school is concerned, and as worthy of being represented on new forms of texts. The linguistic human rights of the speakers of minority Indigenous Australian languages are extended by the use of new technologies that promote distribution of these languages in the children's homes. The development of family literacies, as outlined by Buckingham and Scanlon (2003) and Fillmore (2004) should be supported by the school as part of the ideological and pedagogical responsibility the school has to provide improved educational opportunities for Indigenous Australian children.

Teachers' support for family literacies is important since the learning of the children at school is closely associated with their acquisition at home. As outlined in the literature review, acquisition of family literacies is a subconscious process associated with primary Discourses. As Gee (1996, p.139) has stated

> 'Acquisition (of literacy practices) must (at least partially) precede learning; apprenticeship must precede overt teaching. Classrooms that do not properly balance acquisition and learning, and realise which is which simply privilege those students who have already begun the acquisition process outside the school'.

Teachers of students who speak minority Indigenous Australian languages have a professional responsibility to promote the acquisition of literacy practices by all possible

means. They must be willing to use new forms of texts to attempt to extend the students' meta-level learning about these texts more effective. If students want to tinker with understandings about texts at home, teachers should support this acquisition of literacy practices as the pathway through which to develop meta-level awareness about texts.

Another reason family literacies should be supported as part of the school's responsibility in Indigenous Australian contexts is that members of the community may enjoy reading at home. Providing opportunities for children to enjoy reading is an important role of teachers in locations where the students have been disengaged from education. Datta (2004, p.140) identifies 'friendship literacy' as the process whereby children enjoy 'the experience of sharing, apprenticing and supporting one another'. Repeatedly demonstrated in the literacy events in this study were examples of friendship literacy amongst Kunibídji children. The feedback I received from members of the community who contributed to the production of the Ndjébbana talking books was that they enjoyed the experience of watching the children read their texts. The texts used in this study promoted a kind of friendship literacy between Kunibídji adults and children. In many Indigenous Australian educational contexts where the children are not actively engaged in the formal learning process at school, teachers may benefit by identifying what literacies the children enjoy learning and acquiring. Teachers might be able to introduce new literacies that can be informally enjoyed within the community, family and peer networks that have already been established by the children themselves.

The children's enjoyment of reading the Ndjébbana talking books seems to have been closely associated with their control over the literacy events. The children were in control of choosing the texts, reading the stories, making contributions and telling jokes. The opportunities provided for the children to control the literacy events were part of the study's successful design. The children's identity was woven in the texts, the literacy events and the literacy practices in this study. When studying children's interactions with video games, Gee (2003) identified the integration of identity and learning as a powerful feature of the literacy events. The contextual nature of the Ndjébbana talking books which represented the everyday social practices of Kunibídji children, and the control the children had when reading the texts, meant their identity permeated many aspects of the literacy events. There were multiple opportunities for acquiring the Ndjébbana 'discourses' and Kunibídji 'Discourses' that were negotiated by children in the literacy events. A valid use of school resources, for disengaged Indigenous Australian students, is to provide the children with control over literacy events in which they can access positive representations of their identity.

As a non-Indigenous researcher, my support for the family literacies was dependent upon my intervention into the social practices of members of the Kunibídji community. I collaboratively created the Ndjébbana talking books with the community. I then withdrew my intervention in the community's social practices as the texts were being distributed in the community. Family literacies can be supported by outside researchers working with the community to develop ways of making new forms of text accessible and then documenting the community's response to the texts. The aim of such a strategy is to provide community members with control to make informed decisions about new technological literacies.

As a non-Indigenous researcher, my intervention of providing the participants with choices to access the texts is justified in relation to naturalistic theories of justice. Naturalist theories of justice assume that principles of justice and fairness are fixed and cannot be altered by human interference (Holzgree 2003). The ethics of human rights, for example, are based on a naturalist theory of justice as human rights are not held to be dependent on time or place. Tensón (2003, p.94) suggests that, 'because human rights are held by individuals by virtue of their personhood, they are independent of history, culture or national borders'. The linguistic human rights of speakers of minority Indigenous Australian languages are associated with a naturalistic theory of justice. According to the argument, minority language speakers have the right to access texts in their own languages in a range of technologies. Non-Indigenous intervention into the literacy practices of Indigenous people can only be justified therefore when the human rights of the participants are enhanced as the result of such intervention.

In this study the members of the Kunibídji community could have rejected my intervention, in which case they would have been affirming their right not to have Ndjébbana represented on new technologies or my particular form of intervention in their everyday social practices. As the study documents, however, members of the Kunibídji community did want Ndjébbana represented on new forms of media to read at home. What I am saying is that as a non-Indigenous researcher it is difficult to judge whether intervention will result in benefit to the Indigenous community. Closely associated with the human rights of the participants, I was following principles of harm minimisation. I was ethically bound to abandon the study if I was causing harm to the participants.

One of the apparent reasons for the study's success was my respect for the family literacies of the participants. I respected their preferred language use at home and made the texts in Ndjébbana. I respected their understandings of time, and made the texts over a two year period. By taking time to translate the data I was respecting their ways of knowing and meaning making as well as the daily pressures on their lives. I believe this thesis demonstrates that the family literacies of marginalised Indigenous Australian children may be supported by strategies of intervention and withdrawal of non-Indigenous researchers.

The process of withdrawing my presence after I had recorded throughout the literacy events in this study promoted the peer interactions that have been demonstrated in the vignettes. Teachers of Indigenous Australian students should facilitate the development of new forms of texts in threatened languages. Members of the community should be given opportunities to control the integration of new technological literacies into their primary Discourses. As I have noted in the literature review, Gee (1996, p.146) suggests that 'the mastery of the secondary discourse is facilitated, when primary Discourses have adopted some of the features of secondary Discourses'. For families to adopt new technological literacy as part of their primary Discourses, the family must have control of and access to the new technological literacy in the home. This study has demonstrated the need for schools in remote Indigenous Australian contexts to pay more attention to extending the primary Discourses of their students. The learning of literacy at school would be more meaningful for many Indigenous Australian students if they had opportunities to negotiate new technological literacies at home as part of their Primary Discourse.

Signpost 6 Integrating ownership into elements of multimodality.

In the methodology chapter, I have referred to the elements of discourse, design, production and distribution as parts of the theory of multimodality, according to Kress and Van Leeuwan (2001). These four elements would seem essential to a methodological approach to promoting new forms of texts to Indigenous Australians. These elements can be used as a checklist for an effective methodological approach when constructing texts in under-resourced organisations. One of the faults of the Ndjébbana Two-Way Learning program that has been revealed in this thesis is that the distribution of Ndjébbana texts is limited almost exclusively to the school.

In a minority Indigenous Australian language context, the element of 'ownership' should be added to Kress and van Leeuwan's (2001) understandings of multimodality. The element of ownership would cut across elements of discourse, design, production and distribution. An important methodological concern when promoting new technological configurations with new forms of texts in a minority Indigenous Australian language context is the ownership of the texts. With an understanding that the members of the community own texts in their threatened languages, the access to these texts by the speakers of the language is of an ideological importance to schools in such contexts.

An understanding of the importance of ownership of texts in Indigenous Australian communities is framed by Freire's (1970) concept of banking education. According to Freire (1970, p.58), in banking education 'knowledge is a gift bestowed by those who consider

themselves knowledgeable upon those whom they consider to know nothing owned by the teacher who deposits knowledge to the students'. In a banking approach to education students are 'merely in the world, not with the world or with others' Freire (1970, p.67). Likewise, when I began this study, the Ndjébbana texts appeared to be merely in the world, not available to the children at home for them to negotiate where the texts might fit into their primary Discourse. The school appeared to be banking the Ndjébbbana texts, rather than establishing methods where children could be critical of the literacies embedded in the texts. The choices that I attempted to provide the children in this study began with a concept that the members of the Kunibídji community owned the Ndjébbana texts and that the children should have opportunities to critically reflect the position of these texts in their world.

The ownership of texts in minority Indigenous Australian languages by speakers of such languages is important. Collaborative research partnerships between teachers and members of the community should establish which texts and literacies the children value. If members of the community want to use certain types of texts in their threatened languages at home to extend the ways they make meaning, the school should promote ways of community ownership of such texts. On the other hand, teachers should be critical of producing texts in minority Indigenous Australian languages for the purpose of bridging primary and secondary Discourses when there is little evidence that the community values the use of their language for such purposes.

Implications for the Two-Way Ndjébbana Learning Program

The findings of this study have several implications for the Ndjébbana Two-Way Learning Program. These implications follow from the strong evidence that Kunibídji children want to access Ndjébbana talking books at home on touch screen computers. The changing role of teachers working in the Ndjébbana Two-Way Learning Program is examined in this section. The possibilities of extending the role of the Literature Production Centre (LPC) at Maningrida School are also examined. With reference to the changing role of the LPC, the future of Ndjébbana talking books is discussed.

Teachers working in the community

Throughout this study I spent several years teaching at school during the day while researching in the community at night. After years of teaching Kunibídji children in Maningrida, I felt my teaching was more effective when my teaching space was in the community, rather than in the school. I am not suggesting that the effectiveness of all teachers of Kunibídji children would improve if they were all taught around their homes. However, low rates of attendance and achievement suggest that teachers in Kunibídji classrooms are not catering for the needs of the majority of their students. If they were, then the majority of Kunibídji children would not have such extreme problems of poor attendance and under achievement at school.

At least part of the work of the Ndjébbana Two-Way Learning Program should support the use of Ndjébbana as a primary Discourse by Kunibídji children. Kunibídji children should have opportunities for their language to be supported and taught by teachers in the community as well as at school. As I have noted in the above section, attempting to overlap

the primary and secondary Discourses of Kunibídji children is pedagogically sound, according to Gee (1996). Teachers' work outside classroom contexts could uphold the linguistic human rights of Kunibídji children. Teachers could play an important role in extending the children's technological literacies in Ndjébbana at home. The literacies acquired by the children and taught by teachers in the community could then be extended at school when the students learn their secondary Discourses.

The above proposal to utilise some teacher resources in Maningrida to promote the primary Discourse of Kunibídji children is not just my idea. Kunibídji children have demonstrated in this study their receptiveness to tinkering with new social and technological literacies at home. The same children have established their capacity to control literacy events so they can make their meanings of the texts. They were actively negotiating the role these texts may play in their primary Discourse. Many of the children who demonstrated this receptiveness were unreceptive to the secondary Discourse of school.

Nakata (2003) has identified the importance of developing an Indigenous standpoint with reference to education. While Nakata (2003) has discussed this at length in relation to academic understandings, this study has provided stakeholders of the Ndjébbana Two-Way Learning Program with the Kunibídji children's standpoint on Ndjébbana talking books at home. Educational opportunities that have been presented to Kunibídji children in this study will be further enhanced if the school is receptive to the standpoint taken by the children. Supporting the desire by some Kunibídji preschool children to read Ndjébbana talking books

at home may foster the future academic Indigenous standpoints that will be held by these children.

There are a number of roles teachers could play in promoting the use of Ndjébbana as a primary Discourse. One suggestion, stemming from this study, is to take a communal approach to the production of Ndjébbana texts. The collaborative production of digital texts has worked elsewhere (Debski 1997). This would appear useful in Maningrida, according to the results of this study. Just as the texts are likely to be read in groups, as demonstrated in this study, it would make sense to produce the texts in groups as well. Readers of the texts would notice that a great deal of community participation has been embedded in the final product. Many of the learning outcomes that are currently part of the Ndjébbana Two-Way Learning Program could also be experienced by groups of children engaging with texts in the community rather than in the classroom. Teachers could become skilled in identifying individual efforts in collaborative projects as a way of assessing their students.

The concept of producing Ndjébbana teaching resources in a community workshop is not new. Many books or sets of books have been created as the result of workshops attended by members of the Kunibídji community. In the process of producing and distributing the Ndjébbana talking books, I came to realise how supportive members of the community were in giving their time and knowledge so the children could read their own language at home. My understanding is that many members of the Kunibídji community would be only too happy to contribute to future workshops. Their contributions would be motivated by the access the children would have to such collaborative productions at home. Holding these

workshops in the community would be a significant step in fostering a school and community partnership.

By supporting the development of Kunibídji children's primary discourse, the teachers would also be promoting a community of learners. In producing Ndjébbana texts in the community, teachers could promote collaboration amongst the children. Designing opportunities for Kunibídji children and adults to cooperate in educational activities could be another integral part of the teachers' work. Activities involving Two-Way learning could also be included. The cooperation between teachers, children and adults laid the foundation for the production of the Ndjébbana talking books used in this study. The cooperation amongst the budding community of learners was further extended when the texts were distributed to members of the Kunibídji community.

Teachers may also play a role in raising awareness amongst members of the Kunibídji community about the possible new content and form of Ndjébbana texts. As a result of this study, Kunibídji parents can now make better informed choices about the kinds of literacy events they would want for their children at home. Teachers working in the community could play an important role in proposing new technological literacies that the community may find useful in mediating their languages. Part of the teachers' work would be to support the development of new technological configurations, like the ones presented in this study, that can be evaluated by members of the community.

To support the children's engagement in the Ndjébbana Two-Way Learning Program, the school should establish specialist teacher positions that support the development of the children's' primary Discourses. At present, the organisation of the school is structured as if attendance and achievement is not a major problem for Kunibídji students. If the findings of this thesis were heeded, a specialist teacher of primary Discourses would be based in the community. This teacher could document and report to other teachers at school the designs of meanings Kunibídji children choose to incorporate in their everyday social practices. If teachers demonstrate their capacity and willingness to learn about the primary Discourses of the Kunibídji community then members of the Kunibídji community may be more supportive of the formal learning that is taking place at school. At present, the organisation of Maningrida School supports a one-way model of learning, promoting the secondary discourse of the students, primarily in English. The process of appointing specialist teachers of Kunibídji primary Discourses would lend systemic support for enacting the ideals of a Two-Way learning community.

Particularly in remote Indigenous Australian communities, an important part of the work of teachers is to learn from their students. This learning should not be confined to the classroom. One of the teachers in Heath's (1983) study suggested that 'learning from the students is for us to know what they have, not to tell us what they lack' (p.314).

Many previous teachers of Kunibídji students have established a dialogue between the school and members of the Kunibídji community. This study has attempted to extend home and school community relations through the introduction of new technological configurations that were socially inclusive. This study has demonstrated that ways of knowing for Kunibídji

children include adopting new technological innovations at home. For teachers to take the principles of Two-Way Learning seriously their work should not be confined to classrooms and the support for acquiring new technological literacies at home should be encouraged.

An important reason for teachers working in the community is to extend the kinds of engagement Kunibídji children can have with new literacies. This study was about providing opportunities for access to new technologies which mediated their first language. New literacy events were established amongst Kunibídji children as they choose to engage with the computers in this study. Learners should involve developing critique, analysing and becoming technologically proficient with new technologies (Lankshear and Knobel 2003). Teachers working in the community can extend the opportunities of learning already established by this study that the children want to pursue.

Extend the role of the Literacy Production Centre

The Ndjébbana Two-Way Learning Program could benefit, in my opinion, from extending the role of the Literature Production Centre at Maningrida School. At present the Literature Production Centre primarily produces books in Ndjébbana and Burarra for the Two-Way Learning Programs. The results of this study suggest the work of the Literature Production Centre should not be limited to the production of printed books. The Literature Production Centre currently provides Kunibídji children with texts that many cannot read and to which they do not have access at home. After 25 years of Ndjébbana orthography, I believe most members of the Kunibídji community still frame the technological literacies associated with printed Ndjébbana books as a borderland Discourse. Evidence that members of the Kunibídji

community want to embrace print literacy in the form of Ndjébbana printed books is very limited.

On the other hand, the evidence provided by this study justifies the continued production of Ndjébbana talking books by the school, as a way of introducing members of the Kunibídji community to the possibilities of digital literacy. The LPC should not spend the majority of its resources producing texts that the majority of Kunibídji community members cannot read and are not interested in reading. As this study demonstrates, new technological literacies can be embedded in new technological configurations that can engage Kunibídji children with Ndjébbana texts at home. Work in the Literature Production Centre needs to reflect the opportunities afforded by technology to engage Kunibídji children with new forms of Ndjébbana texts.

To reflect the extended role of the Literature Production Centre that I am proposing, I would consider it appropriate to change its name to the Literature Development Centre. The Literature Development Centre would focus on developing new technological literacies that would be used in Ndjébbana and promoting the community's access to new forms of texts at home. So, instead of just producing printed texts, the LDC could support the students, teachers and community members researching the benefits of mediating Ndjébbana with new technologies.

The difference in scope between the current LPC and the proposed LDC is presented in the table 4. As shown in table 4, the role of the LPC has focused on producing printed books

which limit the technological literacies and multimodality associated with Ndjébbana texts. The LDC that I am proposing would research elements of Discourse, design production, distribution and ownership of new technological literacies associated with Ndjébbana digital texts. This extended role of the LDC is shown in table 4. The focus of the LDC would shift from production of texts to evolving new technological literacies that promote Kunibídji children engaging in and enjoying the reading of Ndjébbana texts.

Technological Literacy	Discourse	Design	Production	Distribution	Ownership
Oracy					
Print			LPC		
Digital Literacies	LDC	LDC	LDC	LDC	LDC
Future technologies	LDC	LDC	LDC	LDC	LDC

Table 4. The scope of the current LPC and the proposed LDC with reference to new technological literacies (vertical elements) and elements of multimodality (horizontal elements)

Perhaps the most important implication of this study for the Ndjébbana Two-Way Learning Program is its clear indication of the direction the program should take based on the engagement shown by the children with Ndjébbana talking books. Staff involved in the program need to work with members of the Kunibídji community to formulate a policy for

introducing their children to new forms of Ndjébbana texts that support new technological literacies. This should be seen as part of their professional responsibility. Providing engaging learning environments while developing new technological literacies encompasses many of the ethical, ideological and pedagogical underpinnings of the Ndjébbana Two-Way Learning Program. A timeline for introducing new technological literacies in Ndjébbana also needs to be established by teachers in consultation with members of the Kunibídji community. Such an initiative would provide Kunibídji children with opportunities to incorporate new technological literacies into their primary Discourses so they can extend the way they make meaning in Ndjébbana.

Obviously the work of introducing new technological literacies will require more than just producing texts. Texts that incorporate a variety of technological literacies will need to be developed and piloted. Members of the Kunibídji community need to decide which technological literacies will be mediated by Ndjébbana. The emerging role of the new technological literacies in the everyday social practices of the children will need to be documented. Policy will be established based on the educational opportunities provided by the new technological literacies mediated by Ndjébbana.

The proposed Literature Development Centre would be more effective in providing Kunibídji children with access to Ndjébbana texts than the current Literature Production Centre if it integrated the elements of multimodality rather than focused on text production. As I have mentioned in the above section on the ownership of texts, the elements of discourse, design, production, distribution and ownership would be a sound strategy for producing and

distributing Ndjébbana texts amongst members of the Kunibídji community. I would argue that the Ndjébbana Two-Way Learning Program should have such a strategy in place to promote the innovation necessary to develop the new technological literacies amongst members of the Kunibídji community.

This study has demonstrated the benefits of moving Ndjébbana text production into the community. With only minor adjustments the current LPC could become mobile, taking text production to homes, with community approval. Using a similar model of knowledge producing schools (Bigum 2002), community based text production could draw on the expertise of parents and students to solve authentic problems. The solutions would be mediated in new forms of Ndjébbana texts that were accessible to those who made the texts. As well as promoting a knowledge producing school, the LDC would be promoting an awareness raising community of the possible new forms of Ndjébbana texts. Gauging the responses of members of the Kunibídji community to the use of new technologies to represent everyday social practices and dilemmas would be an integral role of the LDC. If text production were based in the community, the home and school community partnerships would be nurtured.

Christie (1989) has suggested that Indigenous Australians make a critical link between the medium, that is the form of the text, and the message, or the content, in relation to their literacy practices. It seems that Kunibídji children have already established a link between print and knowledge, regarded by them as 'cold and unchangeable' (Nathan 2000, p.42). Part of the role of the LDC would be to identify ways of aligning the form and content of

Ndjébbana texts that are wanted by the Kunibídji community. Obviously this would involve integrating Kunibídji ways of knowing into the development of new Ndjébbana texts. Teachers are well positioned to research and develop the kinds of literacies wanted by the members of the community. Students could research the links between Kunibídji messages and possible new Ndjébbana mediums as part of their learning. Members of the Kunibídji community could provide the teachers and students with knowledge about the links between Ndjébbana text form and content that they would like to add to their primary Discourses.

To carry out this work the Literature Development Centre should have access to at larger proportion of the school's resources than it currently has. Arguments for supporting the technological literacies of Kunibídji children should be well thought out by members of the community and teachers at the school. The development and establishment of new technological configurations to support the acquisition of Ndjébbana is part of the linguistic human rights of Kunibídji children. Using school resources to engage children with texts at home should be an integral part of a professional approach to teaching in Maningrida.

The future of the Ndjébbana talking books

This study presents ample evidence to justify Kunibídji children having continued access to Ndjébbana talking books. The novelty of the talking books was not a factor that influenced the evidence. The touch screens had been purchased as part of a grant to provide community access to about 45 talking books in 1998. Five touch screens were then placed around the community where many community members chose to access texts about Maningrida. The computers were returned to the school throughout the following year, when they were not

working. One of these computers was fixed, and was used extensively in the production of the talking books, from 2000 to mid 2001. Two more touch screen computers were fixed to provide Kunibídji children with access to the Ndjébbana talking books at home, in late 2001. I make the point that the evidence provided by the children about their desire to access the texts was not influenced by the texts or the technology being a novelty to the children. Most Kunibídji children knew what to expect in literacy events with the Ndjébbana talking books before this study began. This study provides evidence that Kunibídji children want continued access to texts in their own language at home. Continued access to Ndjébbana talking books provides Kunibídji children with multiple pathways to literacy that are interwoven throughout their primary and secondary Discourses.

Continued access to talking books may only be possible if networks between non-Indigenous people living outside Maningrida and members of the Kunibídji community are established and maintained. Networks between community members and people living outside Maningrida have been developed over time to support the production of printed texts. Paper, staples and ink, for example, are not made in Maningrida but purchased from Darwin or beyond for use in the Ndjébbana printed books. Due the limited availability of resources to members of the community, expertise beyond Maningrida community school may be necessary to support the continued development of new forms of Ndjébbana texts. Just because the expertise in the production of digital texts is not available to staff involved in the Ndjébbana Two-Way Learning Program does not mean that Kunibídji children should miss out on educational opportunities with new technological literacies. The Ndjébbana Two-Way Learning Program should be organised in a way that optimises the educational opportunities

for Kunibídji students. Expertise outside the Ndjébbana Two-Way Learning Program may be beneficial in facilitating design of new forms of the texts the community may find engaging.

I have repeatedly argued for the right of community members to have access to and be involved in the production of new forms of Ndjébbana texts. Ndjébbana texts should be continually evolving. My hope is that the Ndjébbana talking books are just another chapter in the history of Kunibídji technological literacies. The challenge is there for members of staff in the Ndjébbana Two-Way Learning Program to develop, or facilitate the development of, new forms of Ndjébbana texts.

If new forms of Ndjébbana digital texts do emerge, there is nothing to stop the integration of these new digital texts with the Ndjébbana talking books. Digital video, for example, could be accessed through a multimedia application which, as well as displaying the video, could also display the talking books. The important point is that new forms of Ndjébbana texts should not be produced with a view to replacing the older forms of Ndjébbana texts. Instead, new forms of texts should be created to complement older forms of texts, both of which give the members of the community a greater choice to read Ndjébbana texts.

Future research

Many gaps in my epistemological understanding about Kunibídji education still remain. While this study has provided some evidence and insight into the children's attitude to Ndjébbana digital texts, there are several obvious unanswered questions. I have outlined some of the most important of these below by presenting the question followed by a discussion of its relevance.

1. What are the developmental paradigms held by members of the Kunibídji community?

In the literature review I mentioned that Rogers (2001) has linked Street's (2001) concept of multiple literacies to the concept of multiple developmental paradigms. Multiple developmental paradigms could explain the apparently contradictory evidence of low levels of engagement in school and high levels of engagement in the literacy events in this study by the same children. The children's understanding of community development may have been supported by many of the literacy events in this study rather than those they generally encounter when they attend school.

The literacy events in this study promoted family literacies where understandings of friendship, family relations and community identity underpinned the desire of Kunibídji children to access the Ndjébbana talking books. This thesis suggests that Kunibídji children were not motivated by an understanding that there is 'virtually no future in anything other than paid work' (Kalantanzis & Cope 2000, p. 125). The fact that most adult members of the Kunibídji community have chosen not to engage in paid work in Maningrida, suggests they

have an alternative understanding of development to that held by Kalantanzis and Cope (2000).

Without knowing the Kunibídji community's ideas about community development, teachers may be involved in trying to achieve learning outcomes of little relevance to the students and other members of the community. If the school were genuinely concerned about the self-determination of the students, efforts would be made to articulate the visions of self-determination held by members of the Kunibídji community. Learning outcomes would be formulated from the starting point of the community's multiple understandings of self-determination.

The methodology associated with this research might be useful in articulating the understandings of Kunibídji community development. These understandings would be enacted in literacy events and social practices to incorporate all aspects of Kunibídji lives. Analysis of vignettes from a variety of discursive contexts would reveal the community' attitude towards development. Members of the Kunibídji community have been enacting their understandings of development for non-Indigenous people to see, ever since Maningrida was established. Just as vignettes of the literacy events in this study were used to document the participants' attitudes towards texts, vignettes of everyday social practices could be analysed to identify the variety of attitudes towards development held by community members. These understandings about development could be used to guide funding arrangements and reviews of programs happening in the community. The goals and

organisation of secondary institutions in Maningrida should reflect the developmental paradigms held by the members of the Indigenous community.

As many non-Indigenous teachers are involved in the education of Kunibídji children, explicitly outlining the developmental paradigms of the community is important. Non-Indigenous teachers entering Kunibídji classrooms should 'rethink the meaning of development' (Semali & Kincheloe 1999, p.19) that is implicitly supported by current classroom activities. Until the developmental paradigms held by members of the Kunibídji community are reflected in the policy documents, and in the classroom activities of the Ndjébbana Two-Way Learning Program, there is likely to be limited community support for the literacy outcomes in the program. Obviously the literacy outcomes and the means by which they are achieved will need to change to reflect the community's understanding of development. In order to articulate the community's understandings of development, further studies are needed.

The changing role that emerging technologies may play in the self-determination of members of the Kunibídji community is another area of future research. How the Ndjébbana Talking Books are positioned with the community's understandings of development could be a part of this investigation. Knowing which specific elements in the literacy events associated with the Ndjébbana Talking Books support the community's understanding of self-determination is also worthy of further study.

2. What are the potential benefits of providing members of the Kunibídji community with financial control of their educational opportunities?

Anybody who has lived in Maningrida for some time will appreciate the positive benefits that have been derived through the direct competition between providers of goods and services. The residents of Maningrida have had more choices as the number of airlines, barges, shops, takeaways and fuel outlets has increased. However, in terms of education, all Kunibídji children living in Maningrida have only one choice of school. While members of the Kunibídji community in Maningrida have limited choices of educational opportunity they also have limited power to enact their own understandings of development. I am not suggesting that competition between providers of goods and services should be passively adopted by members of the community without a critical understanding of the benefits of such competition.

The possibility of establishing models of competing educational opportunity as a way of engaging Kunibídji children in a variety of meaningful educational experiences is worthy of research. The educational choices for Kunibídji children could be aligned with their parents' understandings of self-determination. One way to achieve such a model is for the state and commonwealth governments to devolve the educational budget set aside for each Kunibídji child to the parents of the children. Parents of Kunibídji children would then be in control of buying educational goods and services for their children.

I am suggesting this consumer democracy model of education in light of the results of this study. The demonstrated willingness of the children to adopt new innovative technologies could be better supported by a consumer democracy model of education in remote Indigenous Australian communities. Schrage (2004) has suggested that innovation is not what innovators do but what customers adopt. If members of the Kunibídji community had control over their educational budget, they would be in a better position to adopt innovation. They would also be in a better position to link new innovations to achieving their goals of self determination.

I am also suggesting community control of educational budgets with reference to the high staff turnover and changing agendas that different contract principals bring to the school. The high staff turnover in many remote Indigenous Australian communities favours the non-Indigenous staff assuming control of many aspects of the school. The high staff turnover also erodes co participation between members of the community and teachers at the school. If the community had control of their educational providers, the agenda of the school would become aligned to what members of the community wanted, even with high staff turnover. My proposed model of competing educational opportunities would hopefully lead to more collaboration between the school staff, students and members of the Kunibídji community.

If members of the Kunibídji community had control over their educational budget, the prospects of establishing and maintaining educational programs that reinforced their self determination would be much better than it is at present. The school would be competing with innovative educational programs designed to engage and empower the children. Parents

and children would have real educational choices, cutting across their primary and secondary Discourses. The possibilities of self-determination inherent in such a devolved educational model are obvious. According to Johns (2001, p.41), the 'best prospects for Aboriginal self-determination lie in individual acts of self-determination, reconciled with the modern world.' Devolving the educational budget of Maningrida school to individual Kunibídji parents would promote individual acts of self-determination. There would be nothing stopping parents then combining their money in all manner of ways to purchase items of community benefit. They would be in control of the delegation of educational goods and services in their community.

Pierson (1982, p.208) suggests that 'both internal and external features of the local Aboriginal social community and their positive and negative effects must be considered in evaluating the potential for Aboriginal power and self-determination'. With financial control of their children's education, Kunibídji parents would be in a better position to evaluate educational opportunities for their children within and beyond Maningrida. Promoting literacy events that foster critique amongst the children would seem to be consistent with promoting self-determination of the community. I would argue that teachers and administrative staff at Maningrida school, in general, do not have a meta-level awareness of the self-determination and developmental paradigms that, to some extent, have been enacted in the literacy events of this thesis.

Questions could be asked about where the accountability for financial control would reside in a model of devolved financial responsibility for funding education. Similar questions,

however, could be asked about the current system. Who is accountable for the lost educational outcomes of Kunibídji students over the past 25 years of formal schooling? Providing parents with real control of their children's education would centrally position their concerns in the Ndjébbana Two-Way Learning Program. Their control could bring a normalising understanding to the staff turnover in the school.

Good relationships between Indigenous and non-Indigenous people take time to develop. Where the Indigenous residents of remote communities have real control over the educational programs of their children, non-Indigenous teachers would enter these communities with respect for the knowledge production of the children. Relationships between non-Indigenous teachers and Indigenous parents would be systemically supported by a respect for the self-determination of the community. This respect would be enacted by the parents in their control of the learning spaces in the community. While this respect may still take time to develop, the working practices of the teachers would enact understandings of self determination identified by the Indigenous residents.

A radical model of Kunibídji community control is also justified due to the changing social and technological context. Kellner (2002, p.166) suggests that the changing technological context provides a 'time for challenge and a time for experiment'. The poor formal school achievement of Kunibídji children reinforces the necessity to support a mandate of radical change. The opportunities for parents to take control of delegating or delivering educational opportunities appears appropriate given the children's desire to learn and their non-connectedness with Maningrida school.

A useful way to approach the understandings of self-determination might be scenario planning. Lankshear and Knobel (2003, p.26) suggest scenario planning aims to make polices and decisions now that 'likely to prove sufficiently robust if played out across several possible futures'. I have argued for a scenario of Kunibídji parents taking financial control of their children's education. More work is needed to compare this scenario with the actual achievements of the majority of Kunibídji students to come up with better educational opportunities for the future leaders of the community. The scenario of maintaining the status quo by ignoring the understandings of self-determination held by members of the Kunibídji community needs to be challenged.

3. What are the pedagogical benefits are there in reading Ndjébbana Talking Books at home?
Although I have outlined many aspects of the social practices of literacy in the literacy events in this study, the skills of reading and writing are central elements to any literacy program. More research is needed into the benefits of reading the Ndjébbana talking books at home in relation to skills that can be acquired to support the teaching of literacy at school. This would involve collecting evidence on what symbol-sound recognition is acquired by the children who read the Ndjébbana Talking Books.

Good pedagogical practice would suggest that investigations should be conducted into how literacy practices valued by the children at home can be supportive of the school curriculum. Future research surrounding the children's acquisition of Ndjébbana symbol and sound recognition at home would be explore the role of the Ndjébbana Talking books in code

breaking practices. Investigating literacy skills and strategies that can be reinforced through reading Ndjébbana Talking Books at home would be very useful in supporting the learning outcomes of the Ndjébbana Two-Way Learning Program.

4. Should I have published my thesis on a DVD?

In the methodology section, I have outlined the reasons for presenting this thesis on a DVD. Having presented the thesis on a DVD, I would suggest there are now opportunities for thinking further about the advantages and disadvantages of such a process. I could use many of the concepts that have emerged from the study as a lens through which I could examine the process of digital multimedia thesis production. The concept of a pragmatic approach to texts could be useful. The concept of friendship literacy as embedded in the content and production and ownership of the thesis could also be worthy of investigation. The academic and Kunibídji developmental paradigms that are embedded in the digitalisation of the thesis could be compared. The kinds of 'third space' (Bhabha 1994) and 'Borderland Discourses' (Gee 1996) that are ideologically bound in a thesis on a DVD might be explored. Wilson (1999) has made use of the 'third space' metaphor in the literacies, discourses and the social space of prisons. There is nothing to prevent the production of a multimodal DVD thesis that integrates participant heritage and researcher understandings being conceptualised within 'third space' theory. A methodology of researching 'with' rather than 'on' participants (Cameron, Harvey, Rampton 1992, p.23) would be embedded in this third space.

I have attempted to present this thesis in a form that preserves the voice of the Kunibídji community. May and Aikman (2003) suggest the voices of Indigenous writers can be

included in academic reports when there is a departure from academic conventions. The thesis on a DVD provides opportunities to include actual voices of members of the Kunibídji community who do not have the skills of western academic discourses. This thesis on a DVD is an attempt to 'situate western academic discourse, and its conventions, as only one of a number of epistemological traditions' (May and Aikman 2003, p.139). The search for new forms of texts that encompass traditional western academic discourse and Indigenous knowledge systems is an important area of research.

The educational opportunities afforded by the thesis on a DVD for teacher training and community access should be mentioned. The integration of sound and video of the participants as an integral part of the academic text challenges the concept that 'spoken language is ephemeral, while written language is more permanent, and is therefore portable through time' (Tusting 1999, p.41). More work is needed to identify the designs of non-linear arguments that are made possible by the hybridity and intertextuality of a DVD thesis.

Conclusion

As I have mentioned in various sections of this thesis, the context of Kunibídji education is complex and diverse. I hope the signposts I have used to connect the data and argument of this thesis with plausible suggestions for educational change are useful for other minority Indigenous Australian language contexts beyond Maningrida. I look forward to other signposts being added by other researchers and to reading about the merits or otherwise of those I have proposed. I look forward to other theoretical frameworks emerging to accommodate the transfer of knowledge from one language context to another. As far as the

other implications of this study, I hope my research will benefit staff and students involved in the Ndjébbana Two-Way Learning Program. I hope the thesis begins a dialogue among the community and the school in which individuals will be able to form their own understandings about the possibilities of what I have achieved and proposed. I look forward to the time when Ndjébbana talking books will be competing with other digital Ndjébbana texts that Kunibídji children can read, write and enjoy at home. As for proposed future research, I hope it extends the opportunities of educational engagement for teachers working in remote Indigenous Australian communities. Teachers need to be engaged in researching complex issues in difficult circumstances in remote Indigenous Australian communities, and knowing that their students are negotiating similar issues in their classrooms. The mutual respect for each other's situation fosters an ethic of caring that transcends languages, Discourses and knowledge systems.

I began this thesis with a picture of the research context. I will conclude this thesis with a video of showing the desire of Kunibídji children to read Ndjébbana talking books two years after the data for this study was collected. Listening and responding to their collective voice is sound pedagogical practice.

Postscript

The concept of ownership of texts by speakers of minority Indigenous Australian languages had another implication for this study over and above simply taking an ideological stance on the children's access to texts. The issue of Kunibídji ownership is embedded in this thesis by virtue of my theoretical position on linguistic human rights which required me to approach the research in an inclusive manner. Although the results of this thesis are mine, I could not have presented them in their present form without lots of help from the Kunibídji community. Two women in particular have provided me with advice and assistance in the production of the talking books and the translation of the data.

Lena did much of the work of creating and checking the Ndjébbana talking books. She arranged for her father, who could not read, to record the sounds for the book about turtles. Although he has died his voice is still there for his grandchildren every time they read the story.

While in Maningrida I always lived a few doors away from Lena. We had turns at humbugging each other, involving trucks, telephones, boats, fish, buffalo, computers, video cameras and money. This study would not have progressed beyond first base without her help.

Monica did most of the translation of the Ndjébbana talk recorded on the video with help from other community members who were sitting with her at the time. Many Saturdays passed as we watched the tide go in and out while translating Ndjébbana into English. As the

videos developed into the digital texts that are presented on DVD as part of this thesis, she was proud of her contribution to each one.

I made repeated trips around the community to make sure it was okay to use the videos and talking books in the thesis. This took many days. I checked and rechecked with the community although Monica and Lena had already explained what I was on about in Ndjébbana to many people.

Many aspects of the heritage of the Kunibídji community are embedded in this thesis. Daes (1993) has explained that giving and receiving heritage can form the basis of an ethical relationship between givers and receivers of knowledge.

> Heritage can never be alienated, surrendered or sold, except for conditional use. Sharing therefore creates a relationship between the givers and receivers of knowledge. The givers retain the authority to ensure that knowledge is used properly and the receivers continue to recognise and repay the gift (Daes 1993).

Given my relationship with the participants and the images embedded in the thesis, I am forfeiting any researcher rights I have to financial gain from publishing this thesis. It is my only ethical choice. As a mark of my respect for the work that Lena and Monica did for this thesis, I have arranged for them to share all the profits from any sale of the publication of this

thesis. My life has been sufficiently enriched by my friendships and experiences in Maningrida.

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