EDUCATION, LAND AND LEARNING

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Introduction

In Indigenous policy there is an increasingly desperate desire to lift the educational and employment outcomes of remote Indigenous students relative to their non-Indigenous peers in the rest of Australia. A pervasive lack of engagement with education and a scarcity of jobs underpin this policy anxiety. This paper queries some current policy approaches to these issues and seeks to provide a practical and grounded perspective to education programs in 'the bush'. First, we question and challenge the weight current policy agendas are ascribing to literacy and numeracy attainment through direct and classroom based instruction. Alternatively, we seek to reinvigorate the notion that quality education can also include other modes of learning and include community based educational approaches. We explore the power of blending generic and experiential modes of learning for Indigenous students in remote contexts. As an example we outline the importance of Indigenous land and sea management ('ILSM') as a development and employment activity for Indigenous people living in remote regions of Australia, and show how remote education programs are connecting to ILSM to provide local 'Learning through Country' solutions. Drawing upon direct observation and a scoping study of a range of community programs to illustrate how education and local development can be linked, we discuss two case studies. Finally, from research conducted in a diversity of remote Aboriginal education and employment contexts, we find that there is a commonality of issues confronting attempts to link education with work and development activity like ILSM. We give voice to some of these issues and offer insights relevant for educators and policy makers.

Remote Indigenous education

Remote Indigenous education sits at the forefront of a larger political landscape that has long been characterised by ideological polarisation, political expedience and complex policy function. This landscape is overlaid by a diversity of lifestyle and

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geographic location, differing histories of engagement with non-Indigenous Australia and a wide spectrum of aspirations for economic and community development. In the national discourse, people's daily lives in remote communities — and, indeed, Indigenous students themselves — are being represented in an increasingly reductionist fashion. This is usually presented as a bleak set of numerical disparities concentrating on rates of employment, mortality, violence, crime, substance abuse and suicide when compared with the non-Indigenous population of Australia. Without reverting to quoting well-worn statistical representations of remote Indigenous education's dismal performance against standard measures, it is fair to say that the constants in Indigenous education over the last 50 years or more have been poor levels of attendance, low retention rates, and literacy and numeracy outcomes well below those of other groups within Australian society, regardless of policy.[1] While there is cause for hope (with the data demonstrating a 10% increase in the apparent retention rate to Year 12 over the last decade), this must be set against a recent estimate by the Commonwealth Department of Families, Housing, Community Services and Indigenous Affairs that there are 20,000 students not enrolled in Australia, many of whom may be Indigenous.[2] Evidently there is a long way to go. The research base suggests the reasons for this disengagement and non-attendance are complex and the variables extensive. Even a cursory glance at the literature will canvass reasons for poor educational attainment and attendance straddling the breadth of economic and social activity (and as such, beyond the scope of this paper).[3] In the same vein, the history of policy — and its sometimes nefarious relationship with pedagogy — has seen a raft of policy perspectives, educational programs and settings introduced to rectify the 'Aboriginal education problem'. Many have failed against their own benchmarks of success.

Current approaches to policy

[1] Jon Altman and William Fogarty, 'Indigenous Australians as 'No Gaps' subjects: Education and development in remote Indigenous Australia' in I. Snyder and J. Nieuwenhuysen (eds), Closing the Gap in Education: Improving Outcomes in Southern World Societies (Monash University Publishing, 2010).

[2] Nola Purdie and Sarah Buckley, 'School attendance and retention of Indigenous Australian students' (Research Paper No. 1, Closing the Gap Clearinghouse, 2010).

[3] See Boyd Hunter and Robert. G. Schwab, 'Practical reconciliation and recent trends in Indigenous education' (CAEPR Discussion Paper No. 249, ANU, Canberra, 2003) 16. The authors list a number of these causal factors including: '…disaffection with school and teachers, difficulties in attending school arising from poverty, high mobility, Indigenous inter-group tensions, family pressures particularly in single parent families, high levels of sickness and high death rates among adults and the consequent social obligations placed on the young are prominent among the reasons that Indigenous students have difficulties with formal education. Cultural conflict, cross-cultural miscommunication, and racism are additional important factors influencing decisions by some Indigenous students to abandon school.' See generally, Groome Howard and Arthur Hamilton, 'Meeting the educational needs of Aboriginal adolescents' (Commissioned Report No. 35, AGPS, Canberra, 1995) 4.

The most recent policy remedy in Indigenous affairs, referred to as 'Closing the Gap', involves targeted programs aimed at ameliorating deficits in key areas of social and economic development. Invariably, the role of education is propelled to the front of this discourse.[4] Education is often touted as the 'road map' or the key through which future generations will negotiate and overcome the deficit, or 'gap', to become productive and engaged members of the wider Australian community.[5] The high priority afforded education is evidenced in whole of government agreements, such as the National Indigenous Reform Agreement which sets out schooling as one of the key 'building blocks' in its agenda. Similarly, education has been made one of three key platforms for the next stage of the Northern Territory Emergency Response or 'The Intervention' as it has come to be known. The passing of the the *Stronger Futures in the Northern Territory Act 2012* (Cth), which came into effect on 16 July 2012 and the continuation of the Federal Government's $85.6 million Improving School Attendance through Welfare Reform Measure (SEAM) trials both position the role of education and schooling at the forefront of the policy landscape. At first glance, such endeavours may appear irrefutably noble and worthwhile. As Taylor explains, when viewed through the lens of government, the purpose of education is clear:

> From the state's perspective, the answer is unequivocal — education is seen as a means to providing citizens with foundational skills necessary to function in Australian society, an important part of which involves a pathway into employment. To paraphrase the COAG Productivity Working Group, it provides the means to acquisition of knowledge and skills to enable the effective participation of individuals in society and their employment in a globalised economy.[6]

However, Taylor also suggests that the degree to which the Australian Government's agenda is commensurate with the wants and needs of Aboriginal people in remote regions is far less clear.[72] Particularly in remote regions of Australia's north, the opportunity cost of participation in the 'mainstream' or globalised economy and *ipso facto* education, may be too great for some when set against wants and needs for Indigenous forms of development and deeply held spiritual, cultural, peer and kin based affiliations. These are often social imperatives that directly conflict with neo-liberal forms of economic participation. Furthermore,

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[4] Australian Government, 'Stronger Futures in the Northern Territory Policy Statement' (AGPS, Canberra, 2011).

[5] Pat Anderson and Rex Wild, *Ampe Akelyernemane Meke Mekarle "Little Children are Sacred": Report of the Board of Inquiry into the Protection of Aboriginal Children from Sexual Abuse*, Northern Territory Government, Darwin (2007); Council of Australian Governments Reform Council, *National Indigenous Reform Agreement: Performance Report for 2009–10*, COAG Reform Council, Sydney (2011); Steering Committee for the Review of Government Service Provision 2010, 'Productivity Commission, 2011).

[6] John Taylor, 'Demography as destiny: Schooling, work and Aboriginal population change at Wadeye' (CAEPR Working Paper No 64, ANU, 2010), 6.

[7] Ibid. Taylor is specifically referring here to data on educational performance in Wadeye in the Northern Territory, however, the case remains the same for data from many other similar contexts. See, for eg, William Fogarty, *Learning Through Country: Competing Knowledge Systems and Place Based Pedagogy* (PhD Thesis, ANU, 2010).

these social costs are compounded by economic costs. Again, these costs are most acute in remote regions. Biddle's recent analysis of 2006 Census data found that:

> … access to economic resources, whether as measured by home ownership or income, had a significant and positive association with attendance. Whether it is education, housing or income, a person's socio-economic context explains a large proportion of the variation in Indigenous high school participation, and is therefore a key explanation of …educational marginalisation.[8]

Remote Indigenous social and economic realities therefore have a serious bearing on educational participation and achievement in remote circumstances. The pre-suppositions of simplistic human capital models of education and employment, upon which a great deal of contemporary policy still rests, are easily subverted by local socialities. That is, the idea that a student's primary reason for getting an education is to achieve a greater economic return in the labour market may fail as an explanation for educational participation and achievement. This becomes clear from an evidence-based use of human capital models as demonstrated by Biddle (2010: 32) who finds that 'ultimately …the social and economic costs of education for (some) Indigenous students are higher than the economic benefits it can bring'. Thus, the incentive to do well at school can be very low indeed. And it is here that we find the emerging paradox between the 'Closing the Gap' policy and pedagogy in remote regions that we want now to address.

> The Closing the Gap policy approach is, by design, concerned with the amelioration of statistical inequalities between Indigenous and non-Indigenous people as they are represented in data on key social and economic indicators. It is perhaps unsurprising then, that a tool for data measurement such as the Commonwealth Department of Education, Employment and Workplace Relations National Assessment Program—Literacy and Numeracy (NAPLAN), should feature so prominently in the current policy landscape.[3] The advent of national literacy and numeracy assessment scores has given policy makers a tangible instrument through which to measure educational performance. In recent times, the NAPLAN results have consistently demonstrated that Indigenous students are performing poorly against key educational benchmarks (see Table 1).

Table 1. Students at or above the benchmark minimum standards nationally, as assessed by NAPLAN 2011.

		Indigenous (%)	Non-Indigenous (%)	Gap in percentage points
Year 3	Reading	76.3	94.9	18.6
Year 3	Writing	79.9	96.2	16.3
Year 3	Numeracy	83.6	96.4	12.8
Year 5	Reading	66.4	92.9	26.7
Year 5	Writing	68.9	93.9	25.0
Year 5	Numeracy	75.2	95.5	20.3
Year 7	Reading	77.1	95.7	18.6
Year 7	Writing	66.9	92.6	25.7
Year 7	Numeracy	76.5	95.5	19.0

[8] Nicholas Briddle, 'A Human capital approach to the educational marginalisation of Indigenous Australians' (CAPER Working Paper No 67, ANU, 2010), 19.

Year 9	Reading	71.9	93.5	21.6
Year 9	Writing	55.0	86.4	31.4
Year 9	Numeracy	72.0	94.1	22.1

Source: Original data from Australian Curriculum, Assessment and Reporting Authority (ACARA) 2011).

NAPLAN is also being used as a mechanism to track performance of individuals, schools, regions and racial cohorts over time, most prominently through the Commonwealth Government's 'My School' website.[9] While this may be appealing to policy makers, from an educational perspective the problem comes when the performance tool begins to overshadow and dominate the teaching and learning it is designed to measure.

Partly because of their tangibility in policy making, and partly because of their commensurability with the current Close the Gap agenda, NAPLAN results have increasingly come to represent the pre-eminent measure of success or failure in assessing education programs for Indigenous students. This is despite the fact that many education researchers consistently caution against the reliance and reification of a single assessment tool. As Chris Sarra has noted, 'whilst the NAPLAN data is in many ways extremely useful, we should not "overestimate" their value and pretend that this tells the complete story about our children in schools'.[10]

Sarra is not alone in voicing a need for caution. In discussing the notions of success and failure in education, Schwab found that traditional performance measures such as student attendance, retention and national performance tests ignore the fact that Indigenous people may use education to fit their specific needs.[11] There has long been some question as to what such benchmarks are actually testing. Cultural and economic bias in standardised testing regimes is well noted in both the international and Australian research literature, particularly in regard to Indigenous and/or minority students.[12] More recently, there is a particularly strong body of evidence and analysis of the 'No Child Left Behind' policy in the United States which shows that 'high stakes', standardised testing is becoming a major factor in further disadvantaging minority students from low socioeconomic backgrounds. The main reason cited for this is that such testing pushes students into educational programs

[9] Australian Curriculum Assessment and Reporting Authority (ACARA),'My School' website, 2011, available at: <www.myschool.edu.au/>.

[10] Chris Sara, '2009 Naplan DATA', available at: <chrissarra.wordpress.com/2009/09/11/2009-naplan-data/>.

[11] Jerry Schwab, 'That school gotta recognise our policy! The appropriation of educational policy in an Australian Aboriginal community', in M. Sutton and B. Levinson (eds), *Policy as Practice: Toward a Comparative Sociocultural Analysis of Educational Policy* (Ablex Publishing Corporation, 2001).

[12] See, for eg, Jane Carstairs, Brett Myors, Arthur Shores and Gerard Fogarty, 'Influence of language background on tests of cognitive abilities: Australian data' (2006) 41 *Australian Psychologist* 1; Ronald Hambleton and Jane Rodgers, 'Item bias review' (2012) 4 *Practical Assessment, Research & Evaluation* 6.

emphasising only basic skills; rote learning and teaching focused wholly on test preparation rather than higher level cognitive development.[13]

Ironically, this narrowing of education is particularly detrimental to minority or Indigenous students who most need context-based learning to understand what are often foreign concepts. Conversely, students from majority, first-language backgrounds are handed a comparative advantage as the learning already corresponds with their out-of-school social practices. Furthermore, the linking of government funding to testing, as proposed by the Australian Government means that schools that do poorly on NAPLAN results are more likely to teach heavily for the tests in order to gain funding.[14] In Australia, this has the potential for students in remote Indigenous communities to increasingly experience a narrower, less comprehensive, education.

Many may consider a narrowed curriculum, targeted to the 'basics' of literacy and numeracy, a good thing. Indeed, some of the public discourse surrounding the content and nature of education, particularly for Indigenous students, would have us believe that the 'three Rs'[4] rarely rate a mention in the modern remote classroom.[15] The reality is that there is currently no separate curriculum framework for remote Indigenous students in any part of Australia. Phonetics, arithmetic and grammar exercises have long formed a daily part of the teaching and learning cycle, especially in the remote schools of the Northern Territory where much of the debate is focused. This is also the case in other parts of the country. As Luke notes, in Queensland and New South Wales major longitudinal studies of randomly selected classrooms have confirmed that 'whether traditionalist/didactic or progressivist/activity based — much of the instruction observed was devoted to basic skills and basic curriculum'.[16] While we accept that in the past there have been specific instances where the form of education delivered to remote Indigenous students suffered from an over-emphasis on learning process, it is important to reiterate that the 'basics' of reading, writing

[13] Wayne Wright, 'The effects of high stakes testing in an inner-city elementary school: The curriculum, the teachers, and the English language learners' (2002) *Current Issues in Education* 5; Audry Amrein and David Berliner, 'High-stakes testing, uncertainty & student learning' (2002) 10 *Education Policy Analysis Archives* 18; Sharon Nichols and David Berliner, *Collateral Damage: How High-Stakes Testing Corrupts America's Schools* (Harvard Education Press, 2007).

[14] Australian Broadcasting Corporation, 'Lateline', 10 November 2009 (the Hon. Julia Gillard).

[15] See, for eg, Alison Anderson, 'Remote Indigenous education & employment: A personal perspective' (paper delivered for the Centre for Independent Studies, 11 November 2010, Sydney); Helen Hughes, *Lands of Shame: Aboriginal and Torres Strait Islander 'Homelands' in Transition* (Centre for Independent Studies, 2007); Helen Hughes and Jenness Warrin, *A new deal for Aborigines and Torres Strait Islanders in remote communities* (Centre for Independent Studies, 2005).

[16] Allan Luke, 'Will the Australian curriculum up the intellectual ante in primary classrooms? (2000) 30 *Curriculum Perspectives* 3, 4. See also James Ladwig, 'Modelling pedagogy in Australian school reform' (2007) *Pedagogies* 2, 57–76; James Ladwig and Jennifer Gore, 'Measuring teacher quality and student achievement' (2005) 4 *Professional Educator* 2; Robert Lingard, James Ladwig, Martin Mills, Deb Hayes, Pam Christie, Joanne Ailwood, Merle Warry, Jennifer Gore and Allan Luke, *Queensland School Reform Longitudinal Study: Final Report* Education Queensland, Brisbane (2001).

and arithmetic have always been the cornerstone of educational approaches in Australia.

The issue as we see it is that the aim to achieve against benchmarks in the 'basics' such as literacy and numeracy can lead to 'teaching to the test'. Consequently, highly prescriptive pedagogic models tend to proliferate. These approaches to education come under many names, but focus on drill and rote learning, or 'lock step' learning. One of the more well-known models of this type is the 'Direct Instruction' mode of teaching and learning which has recently been advocated for Indigenous students by Noel Pearson.[17]

In a recent essay on Indigenous education, Pearson argues that learning is instruction.[5] This is a particularly narrow view of education, although one that Pearson justifies on the basis that Indigenous students must acquire the literacy and numeracy skills of the mainstream in order to access their rightful individual place in the mainstream or 'real' economy. This position, he says, is an attempt to break away from, and to critique, the 'soft left' principals in pedagogy, which he sees as an over reliance on ideals of creativity, self-esteem and critical analysis at the expense of skills. In so doing, he invokes a call for the introduction of the Bereiter-Engelmann learning model called Direct Instruction.[18] Much has been written about this program's shortcomings and it has been heavily critiqued since its development in the early 1960s. For example, Steffenson found that:

> Throughout their book, Bereiter and Engelmann compare their 'culturally deprived' subjects to deaf children, and more specifically compare the speech of the former to the writing of the latter. As Lenneberg's work shows, this comparison is a misguided one… If we are to realistically assess the language of children from different ethnic backgrounds and develop programs that will support their transition into a cultural environment rather different from that of their homes, we must either use naturalistic observation or structure the test situation to conform with the rules governing the child's communicative behaviour (sic). Unsubstantiated claims, such as those made by the proponents of a verbal-deprivation hypothesis, will only harm the population of children they are intended to help (footnotes omitted).[19]

Similarly, Crittenden — while acknowledging that some aspects of the Direct Instruction model had applicability — found in his analysis of the program that:

> Any attempt to provide an educational remedy for socially and culturally disadvantaged children at a particular age must take account of the relationship between schooling and other aspects of their lives, and between the special educational efforts at one stage and what is happening throughout the whole range of formal education. The Bereiter-Engelmann program fails, I believe, to do this adequately in either case. In relation to the first, it places too much confidence in the power of an isolated educational effort and seems

[17] Noel Pearson, 'Radical hope: Education and equality in Australia' (2009) *Quarterly Essay* 35.
[18] Ibid.
[19] Margaret Steffenson,'Bereiter and Engelmann reconsidered: The evidence from children acquiring Black English vernacular', *Technical Report No. 82*, Center for the Study of Reading, University of Illinois, 1978, 10.

> to interpret too narrowly what is distinctively educational. In relation to the second, it accepts the practice and goals of the regular elementary school without question.[20]

In what is often cited as the benchmark evaluation of the Direct Instruction approach, Becker and Gersten found that while early gains may appear as a result of the emphasis on decoding text, those gains evaporate and sometimes reverse in the late primary years as learning requires comprehension and not just decoding.[21] This inability to move beyond decoding to comprehension is particularly significant for children of low income and limited English-speaking families who may find themselves left behind.[22] Recent research in Australia reports increases in teacher attrition, decreases in student retention and completion, and a propensity for any Indigenous or minority perspectives to disappear from the curriculum under such approaches.[23]

Given the discussion above, it is important that at this point we make clear that we are certainly not against the incorporation of some aspects of highly targeted and prescriptive literacy and numeracy programs forming a part of the curriculum for remote Indigenous students. In fact, they are a necessity. Nor are we opposed to rigorous assessment of student achievement. Our primary concern here is that the current policy agenda seems so consumed with 'Closing the Gap' that it is forcing the nature, content and scope of pedagogy in a direction that may, paradoxically, lead to a widening in the gaps the government is trying so hard to close. In the United States, for example, where the push for a 'back to basics' approach has a longer history than it does in Australia, there is evidence to suggest that accountability regime driving improvements in basic skills may have in fact made it more difficult for students to move beyond those basic competencies to higher levels of proficiency required for successful adult lives.[24] Our concern is based firmly on the large body of evidence and research that repeatedly notes that Indigenous students learn best when learning has immediate or localised utility and is connected to the lived experience of the student. This is something that highly prescriptive, nationalised literacy and numeracy approaches are unable to achieve.

The need for training and educational development to be linked with community aspirations and development goals is cited by McRae et al.,[25] for example. While

[20] Brian Crittenden, 'A critique of the Bereiter-Engelmann preschool program' (1970) 78 *The School Review* 2, 162.
[21] Wesley Becker and Russel Gersten, 'A follow-up of follow through: The later effects of the direct instruction model on children in the fifth and sixth grades' (1982) 19 *American Educational Research Journal* 75–92.
[22] Ibid.
[23] Allan Luke, above n 17, 4.
[24] Lauren Resnick, 'Nested learning systems for the thinking curriculum' (2010) *Educational Researcher* 39, 185.
[25] David McRae et al, 'What Works: Explorations in Improving Outcomes for Indigenous Students', Australian Curriculum Studies Association, Canberra (2000).

Miller,[26] Balati et al[27] and Catts and Gelade[28] all concur, Gelade and Stehlik[29] make this point, strongly suggesting that location, student aspirations and contextual realities play an integral role in determining relative 'success' in education. In a major study for the National Centre for Vocational Education Research, Miller[30] found the following key factors lead to positive and improved outcomes for Indigenous Australians in education and training:

- community ownership and involvement
- the incorporation of Indigenous identities, cultures, knowledge and values
- the establishment of 'true' partnerships
- flexibility in course design, content and delivery
- quality staff and committed advocacy
- extensive student support services.

Much of the literature is also unequivocal in stating that Indigenous knowledge and local development aspirations must form a central component of educational and pedagogic design.[31] Wallace, Curry and Agar make this point succinctly:

> Developing innovative and successful approaches to education and training in remote and regional contexts with Indigenous people necessitates effective partnership and the recognition of diverse knowledge systems as they relate to the worlds of work, community engagement and learning.[32]

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[26] Colin Miller, 'Aspects of Training that Meet Indigenous Australians' Aspirations: A Systemic Review of Research', National Council for Vocational Education Research, Adelaide (2005).

[27] Balati et al., *Improving Indigenous Completion Rates in Mainstream TAFE*, NCVER/ANTA, Canberra (2004).

[28] Ralph Catts and Sue Gelade, 'Rhetorics and realities: Equating the delivery of Indigenous VET to the demands of its context: Commonalities from two research projects' (Speech delivered at the Australian Vocational Education and Training Research Association Conference, Melbourne, April 2001).

[29] Sarah Gelade and Tom Stehlik, 'Exploring Locality: The Impact of Context on Indigenous Vocational Education and Training Aspirations and Outcomes', National Centre for Vocational Education Research, Adelaide (2004).

[30] Cydde Miller, *Aspects of Training that Meet Indigenous Australians' Aspirations: A Systemic Review of Research* (National Council for Vocational Education Research, 2005).

[31] See, for eg, Jon Altman and William Fogarty, 'Indigenous Australians as 'No Gaps' subjects: Education and development in remote Indigenous Australia' in I. Snyder and J. Nieuwenhuysen (eds), *Closing the Gap in Education: Improving Outcomes in Southern World Societies* (Monash University Publishing, 2010); Damon Anderson, 'From productivism to ecologism: Dilemmas, issues and strategies for VET' (2003) 10 *Australian Vocational Education Review* 1; Jessica Ball and Alan Pence, 'A generative curriculum model for supporting child care and development programs in First Nations communities' (2001) 25 *Journal of Speech-Language Pathology and Audiology* 2; John Henry et al., *Developing Best Practice with Indigenous New Apprenticeships*, Commonwealth of Australia, Canberra, 1999; Inge Kral, 'Plugged in: Remote Australian Indigenous youth and digital culture' (CAEPR Working Paper No. 69, CAEPR, ANU, 2010); Katy O'Callaghan, 'Indigenous Vocational Education and Training: At a Glance' (National Centre for Vocational Education Research, 2005).

[32] Ruth Wallace, Cathy Curry and Richard Agar, 'Working from our strengths: Indigenous enterprise and training in action and research' (Speech delivered at the Australian Vocational Education and Training Research Association Conference, Adelaide, 2008), 9.

What is clear from the research literature, and through decades of our own research with teachers, students and parents in remote communities, is that there is always a great need for educational programs geared to the intercultural, multilingual and bicultural realities of daily life in a remote township.[33] Ensuring that the mix of generic and 'place based' pedagogy is able to allow for learning that is both locally relevant and open-ended, or transportable to other settings, is the challenge. To achieve this mix, localised educational strategies need to be blended with generic learning. Such an approach can maximise community involvement. However, this is being increasingly ignored by policy makers and bureaucrats in favour of a test-driven agenda.

Experiential learning

Part of our perspective on this comes from a high regard for the role that experiential modes of learning can play in remote educational contexts. Experiential learning can arguably be seen as having its beginnings in the progressive education theories of John Dewey.[34] Dewey was a proponent of a positivist educational approach, seen by many as pragmatic, although its essential elements called for a learner-centred approach through scientific inquiry. In the last three decades, the role of 'learning by doing' has become entwined with the idea of linking education with the goals of local communities. Community-based education, concerned with people and their immediate reality, has a reasonably long history and an international research base.[35] Much of this work draws heavily on the writings of Paolo Freire and argues that Indigenous communities can reform education by inserting their own educational aspirations into schools.[36] In this way, the community's goals can become aligned with those of educational delivery.

More recently, community-based approaches have dovetailed with biological and environmental science education to spawn a renewed interest in the power of experiential learning through local landscapes. Grunewald, for example, outlines a field of inquiry through which the 'social and ecological landscape should be studied through first-hand experience; it also must link such experience to the experience of others in other places and to the cultural, political, economic and ecological forces that connect people and places on a global scale'.[37] Similarly Boylan and Wallace[38]

[33] Jon Altman and William Fogarty 2010, above n 2.

[34] John Dewey, *My Pedagogic Creed* (Kellogg & Co, 1897); John Dewey, *The Child and the Curriculum* (University of Chicago Press, 1902 [1906]); John Dewey, *Democracy and Education: An Introduction to the Philosophy of Education* (Free Press, 1916); John Dewey, *The School and Society*, The University of Chicago Press (1953 [1900]).

[35] J.P Comer, 'Home-School Relationships as They Affect the Academic Success of Children' (1984) 16(3) *Education and urban society* 323.

[36] Paolo Freire, *Education for critical consciousness* (Seabury Press, 1972).

[37] David A. Grunewald, 'Accountability and collaboration: Institutional barriers and strategic pathways for place-based education' (2005) 88 *Ethics, Place & Environment* 3.

have invoked Tyas-Tunggal's[39] term 'learnscapes' to create a space where culture community and learning can connect. Conceptually, these approaches are usually set against a universal trend for Indigenous students to reject what Kwagley and Barnhardt see as the compartmentalisation and reductionist nature of school based knowledge acquisition.[40]

Unfortunately, the applicability of a local, place based, pedagogic approach is often subservient to a dominant, 'back to basics' discussion in education about jobs and productivity. Consequently, concepts such as 'a pedagogy of place'[41] have difficulty penetrating, or finding room, in large scale curriculum frameworks. As Zandvliet explains:

> … educational concern for local space (and community in the broad sense) is sometimes overshadowed by both the discourse of accountability and by the discourse of economic competitiveness to which it is linked. In my opinion, place becomes a critical construct to its opponents not because it is in opposition to economic well-being, but because it challenges assumptions about the dominant 'progress' metaphor and its embedded neo-conservative values.[42]

The criticisms to which Zandvliet refers are often expressed in an anxiety that over emphasis on pedagogy based in the local can lead to the creation of educational pathways that are 'closed'; that is, pathways between schooling and work become restricted to providing educational skills that are only of use in a local employment context. However, an increasing research base coming out of the United States is finding that the opposite is true. For example, a study involving 60 schools across the United States found that place based education strategies, particularly when coupled with environmental education:

> … help students make the connections they need to transfer concepts from familiar to unfamiliar contexts. Its interdisciplinary nature helps students to understand the world around them and sharpens their ability to think systemically. The content and skills taught can be correlated to national and state standards and can provide an effective, interesting and motivating way to tie the curriculum together.[43]

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[38] Colin Boylan and Andrew Wallace, 'Engaging with Learnscapes: Connecting community and school' (2009) *Australian Journal of Indigenous Education* 38.

[39] Helen Tyas-Tunggal, 'Hands On Learnscapes' (Paper presented at the Learning through Landscapes: Grounds for Celebration Conference, Winchester, United Kingdom, 21–24 September 1997).

[40] Oscar Kwagley and Ray Barnhardt, 'Education indigenous to place: Western science meets native reality' in G.A. Smith and D.R. Williams (eds), *Ecological Education in Action: On Weaving Education, Culture, and the Environment* (State University of New York Press, 1999).

[41] Alberto Areanas, 'If we all go global, what happens to the local? In defence of pedagogy of place' (Paper presented at the Annual Meeting of the Comparative and International Education Society, Toronto, Canada, April 1999).

[42] Daniel Zandvliet, 'Learning environments for environmental education' (Paper presented at the Australian Association for Research, Fremantle, 5 November 2007).

[43] National Environmental Education and Training Foundation, *Environment-based education: Creating high performance schools and students* (2000).

Furthermore, the study found that the use of place-based strategies in these 60 schools led to better performance on standardised measures of academic achievement in reading, writing, maths, science, and social studies.[6] In this regard, the power of learning in local contexts can be seen to align with the goal of 'closing the gap' in terms of educational attainment.

Reinvigorating experiential and place based learning

While debate over the role of testing and 'back to basics' approaches is unlikely to abate in the near future, it is a truism that educators in remote communities are constantly searching for ways to engage their students in local learning contexts. One emergent approach has been termed Learning through Country programs.[44] These programs, which are proliferating in remote Indigenous communities, are capitalising on the growth of Indigenous land and sea management as a local learning opportunity and growing employment pathway. There is great diversity in what form Learning through Country programs are taking, but as we shall show later in this paper they share a great deal in common. Before moving to examining some of these programs, however, it is first necessary to briefly discuss the development of Indigenous land and sea management ('ILSM') in Australia's north.

Indigenous Land and Sea Management: Development and employment

Over the last two decades, there has been an increasing growth of community-based development activity that falls under the catch-all phrase 'Indigenous land and sea management'. In this paper we hold with the broad definition by Putnis, Josif and Woodward which includes:

> …a range of employment, economic development, training, community and cultural activities in the areas of natural and cultural resource management, land and sea monitoring and reporting for border protection, active participation in the sustainable economic use of land and sea in industry sectors such as mining, pastoralism, forestry, tourism, fisheries, aquaculture, horticulture, wildlife utilisation and the commercial provision of environmental services; and practical maintenance of Indigenous knowledge, culture and heritage.[45]

While the term encompasses a plethora of activity, ILSM begins very much in the notion of 'caring for country'.[7] The notion of the land looking after the people and people looking after the land has long been posited at the core of the Indigenous Australian experience in the anthropological literature.[46] The immutable and multi-

[44] William Fogarty, above n 8.

[45] Andrea Putnis, Paul Josif and Emma Woodward, 'Healthy Country, Healthy People: Supporting Indigenous Engagement in the Sustainable Management of Northern Territory Land and Seas' (CSIRO, 2007) 5.

[46] See, for eg, Deborah Bird Rose, 'Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness' (Australian Heritage Commission, 1996); Peter Sutton, 'Country: Aboriginal

faceted nature of a concept of 'country' is cast as central to constructs of Indigenous identity and cosmologies, as well as to the daily fabric of local socioeconomic order. As such, the term 'caring for country' holds far greater meaning than simply managing the land and sea. As Sithole et al. note, the term 'caring for country' invariably means different things to different people.[47] In particular, there may be a distinction, or even a blurring, between what may be termed formal Caring for Country programs and 'caring for country' as an age-old Indigenous practice.

These formal Caring for Country — or ILSM — programs, to which Sithole et al.[48] refer, have their genesis in the establishment of the Caring for Country Unit at the Northern Land Council in 1994. The role of the Caring for Country Unit was to support the Indigenous land owners and groups who came together to mitigate damage to country from feral animals and weeds and who also wanted a regionally based employment strategy.[49] Aboriginal people participating in these programs soon began to be called 'Indigenous Rangers', and started to identify their ranger groups through distinctive uniforms and logos (see Fig. 1). As such, ILSM development under the Caring for Country program was very much 'bottom-up'. It originated in the communities in which it was to run, as an initiative by Aboriginal people, for Aboriginal people. In this regard it stands in stark contrast to many other development initiatives that have been tried and failed in remote areas of the Northern Territory.

Since its inception, ILSM under the Caring for Country program has been remarkably successful if judged by its spread across parts of the Indigenous estate and its increased employment outcomes.[8] From its beginnings in Maningrida and Nhulunbuy/Yirrkala, the Caring for Country program has grown to include 46 separate ranger groups and to employ over 500 people in the Northern Territory. In May 2007, the 'success' of the Caring for Country model was more formally recognised by the Australian Government who created a program called Working on Country.[50] Notably, this program's inception coincided with proposed changes to the Community Development Employment Program ('CDEP') at the time and the government's focus on employment is evident in the semantic shift from 'caring' to 'working'. There is also now a government funded initiative called Working on Country NT, which is run through the Northern Land Council and supports 15 ranger groups and funds 60 full time positions.[9]

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boundaries and land ownership in Australia' (Aboriginal History Monograph No. 3, ANU Press, 1996); William Stanner, *White Man Got No Dreaming* (ANU Press, 1979).

[47] Bev Sithole et al., 'Aboriginal land and sea management in the Top End: A community-driven evaluation' (CSIRO Sustainable Ecosystems, 2008).

[48] Ibid.

[49] Northern Land Council, 'Celebrating Ten years of Caring for Country: A Northern Land Council Initiative' (Northern Land Council, 2006).

[50] Jon Altman and Sean Kerins 'Submission to the Senate Standing Committee on Rural and Regional Affairs and Transport on Natural Resource Management and Conservation Challenges' (CAEPR Topical Issue No. 15, Australian National University, 2008).

In the context of Indigenous employment in the Northern Territory, ILSM is emerging as a significant 'industry'. If ILSM were separated as an industry of employment from the census data, it would comprise the fifth largest industry of employment for Indigenous people in the Northern Territory. In very remote areas, a conservative estimation of approximately 500 Indigenous workers demonstrates the importance of this form of employment.[51] In addition to existing ILSM programs there is considerable potential for further investment in development through offset arrangements, carbon trading and emission reductions. A successful model of this type of development can be found in the West Arnhem Land Fire Abatement project.[52] In the same vein there is a growing interest in the sustainable development of wildlife enterprises as an area of remote development,[53] and the provision of environmental services ('PES') on fee for service or market based arrangements. There is also an increasing demand for ISLM activity being driven by the proliferation of Indigenous Protected Areas which form part of the National Reserve System.[54]

While ILSM programs are growing and are clearly providing an employment and development option that Indigenous people are choosing to engage in, they also suffer from fragility. Most programs are overtly reliant on short to medium term government funding and are extremely vulnerable to changes in policy. Also, many programs are small, dependant on key personalities and subject to severe capacity and capital constraints.[55] Despite this, the role of ILSM programs in managing the Indigenous estate — which comprises over 20 per cent of Australia's land mass combined with this land's high conservation value, means that a continued need for investment by state, private and philanthropic interests is probable.[56]

Bringing Indigenous Land and Sea Management and education together

The first part of the discussion in this paper has demonstrated a need for learning to be connected to reality and to have utility in local contexts. In this regard, we have

[51] Australian Bureau of Statistics, Cat. No. 2068.0, 'Census of Population and Housing Northern Territory' (State), 'Industry of employment by Indigenous status by sex', 'Count of employed persons aged 15 years and over' (2006).

[52] See generally Scott Heckbert, Jeremy Russell-Smith, Andrew Reeson and Glenn James, 'Indigenous Australians fight climate change with fire' (2011) *Solutions* 2(6).

[53] Adrian Fordham et al., 'The viability of wildlife enterprises in remote Indigenous communities of Australia: A case study', *CAEPR Working Paper No. 63*, CAEPR, ANU, Canberra (2010).

[54] Katherine May, 'Government support for Indigenous cultural and natural resource management in Australia: The role of the Working on Country program' (2000) 45 *Australian Journal of Social Issues* 3.

[55] Andrea Putnis, Paul Josif, and Emma Woodward, 'Healthy Country, Healthy People: Supporting Indigenous Engagement in the Sustainable Management of Northern Territory Land and Seas' (CSIRO, 2007).

[56] Jon Altman, Geoff Buchanan, and Libby Larsen, 'The environmental significance of the Indigenous estate: Natural resource management as economic development in remote Australia' (CAEPR Discussion Paper No. 286, Australian National University, 2007).

cautioned against an increasingly narrow approach to literacy and numeracy acquisition and an over reliance on national testing regimes as an effective means of Indigenous educational measurement. The second part of this paper explored the growth of ILSM programs in Australia's north and showed the importance of ILSM as a form of development and employment pathway. We also noted the importance of 'country' in the social and economic fabric of everyday life in remote communities.

Bringing these two perspectives together, it becomes clear that there is a strategic fit between education and ILSM. Educational programs that link with ILSM can successfully capitalise on the real application of skills and concepts in situ. Learning and employment that is connected to country also has the potential to ameliorate some of the social and economic opportunity costs associated with other forms of education and employment. The combined use of Western science and Indigenous knowledge that underpins ILSM allows for the engagement of Aboriginal people in the learning process, while simultaneously drawing upon high level scientific concepts — especially in the areas of biology and the environmental sciences. At the same time, the English literacy and numeracy skills needed in such work can be explicitly taught through a combination of experiential and classroom based modes of instruction.

Schools and teachers in remote areas have been quick to realise this and educational opportunities partnering students with rangers and associated ILSM activity are becoming a recognisable feature of many remote learning contexts. This has seen the growth of small and somewhat disparate pedagogic developments, variously called 'junior ranger' programs, 'land and learning' programs or 'environmental science' programs. Collectively, we call these Learning through Country programs. In the final section of this paper we analyse two such programs that are occurring in very different contexts.

Learning through Country programs

A number of remote schools and projects across the Northern Territory have developed educational approaches based around ILSM. While diverse in their histories of development, location and pedagogic approaches, they share a number of commonalities. In late 2008 we visited nine different remote communities in the Northern Territory to document current activity in these types of programs, as well as to assess the potential of linking education and ILSM programs more generally. Here we report briefly on two case studies of the programs we have analysed. These case studies encapsulate some of the issues this type of education is facing as well as outlining some areas in need of policy support.

Maningrida Science Program

Maningrida is a township in Western Arnhem Land that lies on the banks of the Liverpool river, 550 kilometres east of Darwin, 250 kilometres west of Nhulunbuy and 300 kilometres north east of Jabiru. The township has a population of approximately 2,950 (approximately 200 of those people being non-Indigenous.[57] In Maningrida, the role of 'country' in education has been a feature of Western educational development in the region since its inception in the 1960s.[58] The most recent incarnation of Learning through Country has seen Western science and Indigenous knowledge incorporated into a secondary school program aimed at enabling students to qualify for university entrance.[10] This began through the identification of ILSM, and associated sustainable wildlife harvesting, as a key employment pathway in the community.[59] With this in mind, Maningrida Community Education Centre adapted its senior secondary science curriculum to include courses and topics significant to local Indigenous students and which related closely to ILSM Djelk ranger activities. These programs fall under 'Contemporary issues in science' and 'Community studies (in science)' which are senior science courses.

Both courses have a heavy focus on scientific inquiry, but allow for flexibility in curriculum design and programming. This has enabled the development of programs that are rigorous in their educational standards and requirements, as well as being relevant to the context of Maningrida. Research in education has repeatedly shown that a student's ability to 'scaffold' new information on top of an existing knowledge base is a precursor to improved educational attainment.[60] While this may seem an easy thing for an educator to do, in contexts like Maningrida the barriers to such a simple proposition can be many. Formidable linguistic and cultural divides often exist between the teacher and student. This inhibits basic conceptual communication. However, at a deeper level, the gap between a student's lived experience and a given educational topic can be immense, particularly in the senior years of school, where the conceptual difficulty of courses is dramatically increased. Learning which is connected to daily concerns of people in Maningrida, therefore, has enabled subject matter of the science courses to better penetrate the boundaries between home and school and to generate generic western learning through local subjects and issues.

For example, crocodiles hold an important totemic and relational place in the local Indigenous cosmologies of Maningrida. They also constitute a threat to a child's safety and as such are an integral part of a child's learning from a very young age. So, when students came to study a unit called 'Contemporary issues in science' that dealt with crocodiles, the subject matter was far from foreign. Students, in the main, were well versed in the life stages of a crocodile, its habitat, its position within the

[57] Australian Bureau of Statistics, above n 52.
[58] William Fogarty, above n 8.
[59] Adrian Fordham et al, above n 54.
[60] McRae et al, above n 26.

wider Indigenous cosmology of the region and had first-hand experience in understanding the animal's ecological needs and wants. This particular unit examined crocodile egg harvesting, which provided students with opportunity to understand crocodilian lifecycles and the scientific basis of egg collection, incubation and husbandry, to examine tourism and commercial aspects of crocodile enterprises, and to learn more about the place of saltwater crocodiles in Indigenous culture. Importantly, the unit dealt with a very familiar topic, but used this base to impart complex Western notions regarding marketing, high level science, commercial and ecological concepts of sustainability as well as literacy and numeracy. It also engaged people of importance in the local community to talk to students about Indigenous knowledge concerning crocodiles. In this way the unit moved the students from a known knowledge base to the development of cognitive skills eminently transportable to contexts far removed from the local.

One of the strengths teachers and students identified in the Maningrida Community Education Centre science course development was that it tapped into the ILSM programs where Elders were already an integral part of the daily program. Engaging important members of the community in schooling is rarely done well. Often engagement is limited to tokenistic formalities such as the ceremonial opening of a new part of a school or the introduction of an important visitor. Very rarely are community Elders directly involved in the pedagogic development of a course or indeed its teaching.[11] For the Maningrida courses, the need to access country for practical experiments and surveys meant that permission needed to be sought from the custodians of the land and the purpose of the learning had to be explained. This provided an opportunity for senior members of the community to be actively involved in the teaching and learning development from inception. The content was on topics which they often had intimate knowledge, and the fact that at least some of the activity was to occur on their country imbued them with a sense of responsibility and ownership over the program.

One of the major difficulties encountered by teachers in remote contexts is being able to provide work at a level that is accessible by students with extremely limited English literacy and numeracy without 'dumbing down' outcomes. To some extent, the Maningrida Community Education Centre courses have been successful in partially negating this issue through a heavy emphasis on practicals and fieldwork, where a large part of the learning is experiential. This enables modeling and group work within a field setting, defuses some of the classroom-based behavioural issues, and can accommodate a greater range of 'teachers' in the form of scientists, rangers and community members. However, an emphasis on fieldwork has not been at the expense of rigorous scientific method, properly formulated results, and higher level conceptual development that is classroom based. The courses are accredited through the board of studies which mandates certain outcomes, including in literacy and numeracy, and are moderated and peer reviewed. Similarly, the courses demand, and expect, a high level of performance from the students. Stage one and two courses are difficult, particularly when students have low levels of literacy and numeracy, and students generally take up to 18 months to complete a course. However, the

expectations that they can achieve at this level, and importantly the belief of teaching staff and parents that students can achieve, is an important facet of course design in this case.

A major weakness of the Maningrida courses has been their heavy dependence upon the commitment and drive of a particular teacher with an interest in science and the ability to see the connections between learning and ILSM (this theme is common in other places we have conducted research). The need for teachers with the ability to bridge the divide between school, community and work in a way that privileges the local through place-based pedagogy, while building links to the national educational outcomes, is critical in remote Indigenous contexts. Fundamental to this is the harnessing of the best practitioners in remote contexts. In the Maningrida situation, as is commensurate with other remote learning contexts, teacher turnover is high, teacher experience is generally low and some teachers see their role as somewhat unconnected to the local context.

Connections between teachers and the community currently depend on the willingness of teachers to 'put themselves out there' and to 'drive' place-based pedagogy on their own. Systemic support for external engagement with the community is negligible and tends to be expressed through arrangements at a level beyond classroom activity. In the case of the Maningrida courses, success was achieved by an enthusiastic and interested teacher with the commitment to drive the courses development over a long period of time. The employment of such teachers cannot be assumed. Rather, the impetus to harness localised learning needs policy support and a willingness of education institutions to vigorously promote local connections between school, community and work. This can then foster an enabling educational environment, particularly for new and inexperienced teachers.

In 2012 the program has retreated to being offered only to the middle school cohort and there have been difficulties in establishing workable links with the Djelk ranger program due to differing work priorities and changes in personnel. As at July 2012, the school and the Djelk Ranger's host organisation, Bawinanga Aboriginal Corporation, have signed a Memorandum of Understanding outlining roles and responsibilities within the program to facilitate better delivery and will participate in a new pilot program being developed for 2013.

The Anindilyakwa Junior Ranger Program

A second example of the Learning through Country program is operating at Groote Eylandt under the auspices of the Anindilyakwa Land Council ('ALC'). The Groote Eylandt archipelago is situated on the western side of the Gulf of Carpentaria, approximately 600 kilometres south-east of Darwin. The land owners of the region are the Warnindilyakwa, but are referred to by their language name of Anindilyakwa. There are three Indigenous communities in the archipelago —

Angurugu, Umbakumba and Milyakburra (Bickerton Island).[61] Schools at each of these communities are beset by difficulties in sustaining attendance at levels commensurate with achievement in literacy and numeracy. A 2009 review of education in the region found that for Angurugu with 250 Indigenous students, attendance ranges between 35 per cent and 50 per cent; for Umbakumba with 110 enrolments, attendance ranges between 55 per cent and 60 per cent; and for Milyakburra with 30 enrolments, attendance percentages oscillate between 50 per cent and 80 per cent.[62]

Under the auspices of the ALC, a 'junior ranger' program in the region began in 2006 through the interest of Indigenous rangers in the intergenerational transfer of Indigenous knowledge, and a recognition by the ranger coordinator of the links between education and ILSM.[12] Initially the program grew out of ILSM work with Northern Territory Fisheries. Students were engaged in a survey of different types of fish and students participated in the collection of data on sharks and stingrays. This work was integrated into the school curriculum and became the catalyst for a junior ranger program.[13] Subsequently, a locally driven interagency group was formed which included the ALC land and sea management organisation, Northern Territory Schools, the Department of Fisheries, Gemydu youth development unit and the Police Indigenous Liaison Unit. The group's aim was to develop the concept of the junior ranger program and to create linkages between the Indigenous communities, the schools and the environmental learning and work roles associated with ILSM. The group also wanted the program to have a strong focus on pastoral care and alcohol and drug awareness. In 2009 a full time junior ranger coordinator was appointed to run a junior ranger program two days per week, as well as engaging senior school students in Certificates I and II in Land and Sea Management.

During fieldwork in August 2008, we interviewed eight of the Indigenous rangers as well as meeting with staff from the school, ALC staff and land and sea management coordinators. Consistent with other programs we have researched, the ALC junior ranger program was dependent upon the inspiration and drive of key individuals, especially in its early stages. The ALC junior ranger program developed from the 'ground up', or organically. In this regard, the program drew very little from experiences in other places. Such a localised beginning can be seen as a strength in the program, allowing for learning suited to the context and the development of natural synergies between the ranger group, the school and the students. However, the absence of any institutional support from outside the region placed a heavy strain on staff members of the school and ranger personnel as the program was being run in addition to already demanding work roles.

The formation of a cross-sectoral group overseeing the junior rangers has enabled the program to draw on support from across the archipelago and the program has

[61] Anindilyakwa Land Council, 'Anindilyakwa Land Council Report' (Anindilyakwa Land Council, 2009).
[62] Ibid, 59.

been able to mobilise resources and finance from a variety of sources. In particular the existence of the Gemco mine was an obvious source of funding. In addition to the mine, the involvement of the police and the Gemyu youth development group has meant that the junior rangers have a heavy focus on issues such as social responsibility, drug and alcohol awareness, and personal safety.

From an Indigenous perspective, the junior ranger concept has provided an opportunity for the transmission of language and knowledge on country. All the Anindilyakwa rangers interviewed alluded to this being the key reason for their involvement and their willingness to work with students. One ranger, when asked why he became involved in the program, gave the following explanation:

> This is time when we can take these kids to bush or out on sea Country. In other times this was a thing that happened all the time, you know every day. Now, people are too busy for Country. Kids don't really learn. Some, they know all the stories but they never spent any time at that place. Other ones, they have no story or their family didn't teach them properly. Some families were drinking all day from that mine (royalties). Rangers like us are on that Country and on that water so we see. We can show those kids. Teach them what we know from our own way of knowledge. We talk to them in language and give them opportunities. It makes us proud to do this for the school. And, same way, same way, kids see that old peoples' knowledge—very important those stories. He can take them in his heart.

Fundamentally however, most of the Indigenous rangers were concerned far less with the formal schooling outcomes of the program:

> Yeah, its good kids have school paper (work sheets) and that they can learn, but really first from my way is they gotta learn about that Country'.

Perhaps rather predictably, this can be seen in stark contrast to the perspectives of teaching personnel involved in the program. Primarily, teaching staff involved in the program saw the junior ranger concept as a vehicle to achieving outcomes in literacy and numeracy and increasing school attendance. A senior member of the Angurugu school for example, was focused on potential for the junior ranger concept to provide learning content in context of producing outcomes against the Northern Territory curriculum requirements.

> For us this is one of the really big options. We have enormous problems with attendance at school and we are also constantly battling to find real options to motivate students. Time on Country removes students from the problems they face in their everyday lives, their environment. It removes them from the things that drag them down. What we are trying to do is work on the required literacy and numeracy skill they need to acquire, we do that in the classroom and then move onto country to give those skills a reason. We are working on VET [Vocational Education and Training] courses and integrated science programs through the … you know … community studies at stage one and two that's a goal for us … a long term goal. But at the end of the day, what we hope to build is a real end point. A pathway as they say. Kids don't have to stay here, but if we can place them in a job at the end it gives them a goal and something to aim for. The good thing about working with the ALC rangers is that we can build transportable skills. Still, literacy and numeracy are the first stepping stone and these types of programs are gold for this.

The Anindilyakwa program is an example of how the different perspectives of education staff and Indigenous community members are able to come together to create a learning program in which the objectives of each can be fulfilled. However, balancing these different needs for knowledge transmission required the involvement of a number of different perspectives, organisations and members of the community, beyond the school. As in the Maningrida case, this can be both a strength and a weakness.

In July 2012 the program has ceased to be a regular part of the schooling program. While the reasons for this are complex, essentially there has been a break-down in communication between key personnel as staff has changed and this has seen a loss of corporate knowledge between institutions and a subsequent failure to value the program. This is a common problem with local education programs that are not supported by policy frameworks aimed at mitigating the 'churning' staff in remote education and development contexts.

Key insights: What can Learning through Country approaches teach us?

The two case studies we have provided here, in combination with research in seven other remote locations has allowed us to identify the following common findings regarding these educational approaches:

- Learning through country is not new, but to be effective it must facilitate learning that penetrates the boundaries between home and school.
- Students bring a wealth of knowledge to the classroom that can be validated and incorporated in learning.
- Senior members of the community are an asset and their knowledge and participation in various approaches to learning on country can support and extend learning both inside and outside the classroom.
- Engagement increases when learning is linked to the transmission of language and culture and activities of direct importance to adults in the local community
- The design of courses with an emphasis on experiential learning 'in the field', coupled with maintenance of a high level of expectation related to student performance may increase achievement.
- Learning through country approaches can be an avenue to tertiary entrance by providing a clear and relevant reason to continue study.
- Commitment and enthusiasm of teachers is essential but not sufficient.
- Interagency cooperation is a challenge but can provide enormous support and additional resources.
- Learning through country has widespread relevance to Indigenous communities and many learning modules and instructional materials can be readily adapted from place to place.

- Even the most successful programs are vulnerable to loss of corporate knowledge through changes in staff and key personnel if programs are not embedded in policy.

The research we conducted on Learning through Country programs in remote Indigenous communities in the Northern Territory also elucidated a number of common problems. While in the main these issues are pragmatic, not pedagogic, they should be seen as constituting a threat to sustaining and developing these types of educational programs.

Key issues: Policy and resourcing

Securing funding for Learning through Country programs was a common difficulty observed in our study. Programs often survived on unsecured annual grants, like the Tangentyere Land and Learning program operating out of Alice Springs, or relied upon untied mixed modes of support, such as the Anindilyakwa Junior Ranger Program. In other cases, ranger groups had secured funding from non-government organisations (NGOs) and other organisations to support Learning through Country activities, and built links with schools. There was consensus, however, that securing funding placed increased workload on all people involved in the programs and was seen as a major hurdle in sustaining the programs. Conversely, there was also consensus that these programs were worth pursuing and seen as important to both the future of ILSM programs and the engagement of Indigenous youth.

> Similarly, even the simplest activity requires some level of resourcing and that the level of support available was highly variable across the communities we visited. Sending a ranger into the school to give a presentation, developing a new approach for incorporating Indigenous knowledge into secondary science curriculum or taking students out on country for example, all have significant resource implications. All of the stakeholders we interviewed recognised that finding the resources to support activities and programs is a complex and difficult challenge. Even where resources have been forthcoming, people noted these resources are too often subject to ad hoc arrangements and/or competing demands for use. Simple things like access to vehicles, physical space for offices, administration and storage were some examples program staff agreed made for provision difficulties.

Our research also found tremendous variation in local contexts as we travelled from community to community. In some communities Indigenous Protected Areas (IPAs) are in place, in others IPAs do not exist or are under application. Some communities have large mines on local lands, others have extremely limited industrial development in their regions. The result of these contextual variations is that communities operate in quite different political, social and economic situations. IPAs provide some clear opportunities relevant to land and resource management through funding and demand for ILSM skills, while mining agreements in some locations have enabled access to resources or activities that can support youth and land initiatives. Some communities have neither of these and so cannot draw on potential benefits from IPAs or mines. The issue, as we observed it, is that any

model of engagement involving young people and land and resources will be shaped (and perhaps facilitated or inhibited) by the local context. Consequently, development activity needs to work carefully to accommodate that context. This is an integral issue to the future sustainability of linkages between education and ILSM. Localised, 'ground up' and consultative development of models are clearly imperative. Conversely, the need for systemic, coordinated support and policy is also palpable.

More positively, our research found there were many examples of ways in which connection to land and sea was seen to have great potential for young people and their future—that go far beyond ILSM programs. These include a variety of possible career paths including art, tourism, environmental science, border protection and biosecurity work. Connection to land and sea can, at the same time, be more fundamentally about how Indigenous knowledge of land needs to be protected and passed on to young people. Similarly the role of formal education in intergenerational transfer is just one part of the broader opportunities to ensure knowledge and connections to land and sea and, indeed, employment are maintained. However, there was no feedback suggesting that formal education did not have a role in these areas. This is important in a policy context where localised forms of learning are increasingly subject to nationalised and standardised educational formats. We also found that in each case, these programs were easily able to support basic English literacy and numeracy acquisition as well developing higher level cognitive development, particularly in the area of science.

Finally, it must be noted that at any time there are multiple policy agendas that can affect Learning through Country programs. Most prominent in the Northern Territory policy context during our research has been the Northern Territory Emergency Response, or 'The Intervention'. The impact of the Intervention upon the different communities researched has not been uniform. Some communities reported dramatic effects; others suggested there had been little noticeable impact on the ground. Similarly, the continuing threat to dismantle or change CDEP arrangements has created a sense of uncertainty for Indigenous organisations in remote communities. In the same vein, there are also multiple Territory-level policies overlapping with numerous national policies related to health, education, employment and myriad other aspects of community life that can affect program provision (e.g. the Working Futures policy). While this creates numerous opportunities for strategic engagement, it also creates a ground that is constantly shifting and can actually mitigate against the transfer of key knowledge to support this type of learning. Again, the need for overarching policy about Learning through Country education provision is important. Without this strategic development, the overwhelming administrative and coordinative burden on people on the ground may prove to be an ongoing threat to the sustained success of this exciting and growing area of remote education.

Conclusion

Excitingly work is currently underway to implement a small number of targeted and funded 'Learning on Country' pilots in the Northern Territory. This will be a chance to monitor and evaluate their progress, as well as continue work towards overarching educational models that can be used for cutting edge curriculum. This will also be a chance to create solid training and employment pathways for at least a few lucky places. Similarly, the Federal Government made a 2011-12 budget commitment to four million dollars over three years to 'Indigenous Ranger Cadetships'. These are being trialled at six schools during 2012 and a further six in 2013 — with an investment of about $140,000 per annum per school. While belated, this government support is a vital boost in this area of educational development for remote communities. It is important, however, that in implementing programs for the future, the successes derived from the 'bottom up' development of learning through country programs do not become subservient to the state's propensity for poorly construed, 'top down' policy interventions. Supportive policy frameworks based on engagement are clearly the best option.

In a time of increasingly strident programs related to English literacy and numeracy, and a desperate desire to close the gap in Indigenous education, it is important to continue to watch what is happening on the ground between educators, local employment and development work, and Aboriginal people. We are currently seeing a re-emergence of educational programs that are geared to the reality of their locale and based on a blend of experiential and generic learning approaches. These programs connect students and their communities to education and help in developing localised economic options and employment pathways. As such, they represent an important contribution in the difficult field of remote Indigenous education policy and pedagogy. However, they require on-going policy support and development in order to be successful in the long term.