Capacity Building in Inuit Education

A Literature Review

Lena Metuq M.Ed. Longest Serving Inuit Principal in Nunavut
Recipient of Canada's Outstanding Principal's Award (2006)
Photo Credit: Carlos Reyes-Manzo (2009)

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Executive Summary

This review draws its definition of the phrase "capacity building" from Eade (1997) and Fullan (2000) to assume that, when applied to education, it signifies development of the ability of all educational stakeholders to foster learners' academic and personal success as well as their sense of self-sufficiency and agency.

Educational success depends on strong principal leadership (Bell et al., 2004; Fulford et al., 2007; Hale and Moorman, 2003; Stevenson, 2007). Paths to the principalship in the United States through recruitment, selection, and preparation programs are being revisioned with implications for other jurisdictions. Remote location and cost are major barriers to further education for potential Inuit principals and teachers. Adequate, stable funding is required to build educational capacity (Archibald, Glickman and McKinnon, 2005; McGinty, 2002; Preston, 2008). College-transferable local courses and virtual education help to overcome barriers of distance. (Poelzer, 2009). Educational leadership training is crucial for school boards and district councils (Cherubini and Hodson, 2008; Fulford et al., 2007; Mead et al., 2007), particularly when selecting principals (Hale and Moorman, 2003).

New principals and teachers benefit from professional and cultural mentoring (Mallon, 2004; Martin and Robertson, 2004). Mentoring Inuit principals and teachers can help them to balance their roles as community leaders and negotiators (Archibald, Glickman and McKinnon, 2005). Phone, e-mail and distance networks provide mentorship support (Government of Australia).

Academic capacity is fostered when educational environments create cultural continuity (May, 1994; Oakes and Maday, 2009; Tompkins, 1998). Academic success was achieved in some Inuit schools through program changes. (GNWT, 1996; GN, 2008; Metuq, 2009; Stevenson, 2007). Encouragement and academic support can minimize the loss of potential Inuit teachers (Archibald, Glickman and McKinnon, 2005; Burgess, 2008). Successful teacher preparation programs include curricula that reflect Aboriginal culture and ways of learning. Mandatory Aboriginal Studies courses prepare non-Aboriginal pre-service teachers to work with Aboriginal students and teacher-colleagues (Mooney, Halse and Craven, 2003).

Elders and community members can help to create a local curriculum that blends Aboriginal and Western forms of knowledge (Battiste, 2002). Language retention is crucial. Immersion Head Start programs have an impact of later academic performance (McCarty, 2003; Stiles, 1997). Technology may play a central role in bridging the distance gap and language support when software is created in consultation with Inuit educators, Elders and communities.

Gaps in Research

1. Lack of Educational Research Specific to Inuit Educators and Students

There is a lack of educational research specifically related to the capacity building of Inuit. Research from other Aboriginal communities is enlightening, but curriculum, for example, does not always transfer across ethnicities. Longitudinal studies of the efforts, successes and challenges encountered by Inuit principals, educational leaders and educators would be invaluable, especially at a time when school environments, languages and curricula are changing. Greater understanding of factors that promote Inuit students' academic and personal success would address research gaps.

2. Lack of Research Describing the Educational Experiences of Inuit Educational Leaders

Inuit principals and educators are central to educational capacity building. Further research could identify supports and barriers encountered by Inuit who become educators and complete educational leadership preparation programs. The value of different mentoring initiatives could also be investigated.

3. Limited Research into Inuit Language Initiatives

Longitudinal research would trace the effectiveness of language initiatives such as Head Start and immersion Head Start, 'language across the curriculum', and other educational programs designed to retain and revitalize Inuit languages. The contribution made to urban Inuit by institutions like the Ottawa Inuit Children's Centre could be documented and disseminated.

4. Research into School Governance

This review points to the need for organized professional training of members of district education councils or other school-governing bodies. Research illuminating the successes and challenges encountered as these initiatives are implemented would strengthen development of a network of informed educational administrators across Inuit educational jurisdictions.

Implications for Inuit Education – Policy and Practice

1. **Sustained Support for Professional Development**: Long-term stability is important for Inuit educators who enroll in pre-service education or graduate programs. School leaders embarking on program change, or educators whose work extends over many years need ongoing encouragement, support and professional education programs to maintain their energy, morale and creativity (Archibald, Glickman and McKinnon, 2005; Bell et al., 2004; Carr-Stewart and Steeves, 2009; Fulford et al., 2007; McGinty, 2002).

2. **Capacity Building at the Community Level:** Research recommends professional education programs be developed for local school or adult education administrators. If district education councils and school boards take part in the selection of candidates for principal-preparation programs, their role in promoting change will be more significant (Cherubini and Hodson, 2008; Hale and Moorman, 2003; Mead, 2005).

3. **Investing in the Academic Capacity of Students**: Early language immersion initiatives, such as Head Start, improve students' academic achievement and enhance their sense of self. Investments in early childhood programs offer promise of increased capacity in the future (Canadian Education Statistics Council, 2009; McCarty, 2003; Stiles, 1997). Further development of these programs and in-school language initiatives would increase student capacity and support language retention in Inuit communities (McCarty, 2003; Tompkins, 1998).

4. **Improving Access to Learning:** Technology has the potential to overcome problems of remote location, providing access to a range of professional learning experiences. Virtual and distance learning, guided by Inuit educators, Elders and community members, offers promise with respect to the retention of culture and language (Aporta and Higgs, 2005; McAuley, 2004; Rajasingham, 2001).

Introduction and Definition

Fullan (2000) applies the term capacity building to education, stating that capacity building encompasses investment and activities that range from training for local school councils through redesign of initial teacher education to the creation of professional learning communities inside and outside school (Fullan, 2000).

Based on the review of literature, this paper assumes that capacity building means developing the professional abilities of educators, administrators, policy-makers, parents and community members to foster learners' academic and personal success and develop their sense of self-sufficiency and agency.

Capacity building in education therefore has two components: one that focuses on professional learning and leadership development for educators, parents and community members who support education; the other focusing on developing the academic capacity of learners at all levels in the educational system.

Methodology

The literature review was requested by the National Inuit organization, Inuit Tapiriit Kanatami (ITK) to inform decisions related to the Strategy on Inuit Education that is being developed by the National Committee on Inuit Education (NCIE). Dr. Fiona Walton managed the research, coordinated communication with key researchers in the field, and reviewed and edited the report. Two part-time researchers, Dr. Jessie Lees, Adjunct Professor (UPEI) and Joe Burgess, a graduate Research Coordinator, gathered relevant sources and identified common themes. Dr. Lees wrote the review.

The researchers prepared an initial thematic outline. This was refined and modified when ITK created a list of issues to which it gave priority. Each issue became a theme for the final review. The literature selected within each theme was considered the most relevant in the context of Inuit education in Inuit Nunangat.

Building Educational Leadership Capacity

In 2004, Bell et al. carried out case studies of ten Canadian schools. A further ten schools were described by Fulford et al. in 2007. Schools were chosen for their identified success in Aboriginal education. Elements of effectiveness were linked to leaders, usually school principals, with strong vision and high standards who were not afraid to challenge the system. These leaders collaborated with staff members and communities to create a welcoming school climate

grounded in Aboriginal culture, language and traditions. In Nuiyak School, the one primarily Inuit school in the studies, a Qallunaq and Inuit co-principal worked together so that "strong leadership at the principal level was a critical factor in developing a long-term vision for success at the school" (Stevenson, 2007, p. 40).

A report of the Institute for Educational Leadership in the United States notes that: "laser-like attention is being focused on one of the variables critical to effective education: leadership" (Hale and Moorman, 2003, p.1). The key role of the principal is evident in many case studies. Tompkins (1998), for example, as principal of Anarapaktuq School, worked with staff and community members to increase student achievement, improve school climate and gain general community support. The same potential was seen in the school leadership in Aklavik (Lewthwaite, 2007). A particular manifestation of Canada's, "unprecedented need to increase the number of Aboriginal peoples who undertake and complete post-secondary education" (Preston, 2008, p. 1) calls for the organized recruitment and training of Inuit principals for Inuit schools. Lack of funding is a major obstacle as is geographic remoteness (Archibald, Glickman and McKinnon, 2005). For principals with post-graduate qualification the university environment may be less daunting than for teachers, but the exclusiveness of university programs and their delivery are still potential barriers to recruitment (Preston, 2008).

Building the Leadership Capacity of Principals

Preparation of Educational Leaders

The self-selection of candidates for principal preparation programs does not ensure quality (Hale and Moorman, 2003; Lashway, 2003; National Commission on Excellence in Educational Administration, 1987). Hale and Moorman (2003) argue that schools, school districts, and universities, working together, should select highly qualified candidates and increase the caliber of principals. They advocate extending the applicant pool beyond the teaching community.

Principal preparation programs in the US are under scrutiny. A survey of educational leaders showed that a majority of principals and superintendants felt traditional leadership programs were, "out of touch with the realities of what it takes to run today's school district" (Farkis et al., 2001). In response, standards for school leaders, established by the Interstate School Leaders Licensure Consortium (ISLLC) in 1996, were revised and adopted by the National Policy Board for Educational Administration (Council of Chief State School Officers, 2008). Progressive, non-university-based programs began to emerge, and some were approved for licensing by State education departments. The American Association of School Administrators, in partnership with an on-line training corporation, developed an on-line principal preparation program based on ISLLC standards (Hale and Moorman, 2003, p.15).

Revised ISLLC standards require principals to safeguard values of democracy, equity and diversity. The word 'Aboriginal' does not appear though there is growing awareness in Canadian research literature of the need to incorporate Aboriginal knowledge into education programs and prepare non-Aboriginal educators for work with Aboriginal students.

Mentoring

In-service support and development tools for newly appointed principals include orientation, education and training (Government of Nunavut, 2003). Mentoring augments these by offering on-going support and problem solving across distance. In the United States, a new principal and her mentor describe the value of "a steady stream of e-mail communication containing necessary knowledge, authentic feedback and mutual and sincere caring" (Boris-Schacter and Vonasek, 2009, p. 494). The teacher induction initiative In the Northwest Territories (NWT) (Government of the Northwest Territories, Department of Education, Culture and Employment, 2000) has, all in all, improved the skills of new and experienced teachers" (Mallon, 2004, p. 5). Mallon notes that the Yellowknife boards have paired new principals with mentor principals. In Nunavut and before that in the NWT, the Education Leadership Program (ELP) offered annually for almost 30 years is directed at educational leaders, including principals. A principal induction program in New Zealand (NZ) involves action plans; principal's portfolios; needs assessments; coaching; an E-community; and a residential program where participants meet for 3-4 days at a time (Martin and Robertson, 2003).

Mallon (2004) explains that experienced but new-to-the-North teachers need to recognize the uniqueness of teaching and living in the NWT. Local teachers, sometimes with a member of the District Education Authority (DEA), provide on-going orientation to the culture of school, region and community. Similarly, experienced principals who are new to Inuit students and communities may require mentoring, primarily to help them relate to Aboriginal students, incorporate local culture and connect with their communities. These professional and cultural elements of mentoring are apparent in Texas programs designed for, "first-year principals and/or those new to the state of Texas" (Hale and Moorman, 2003, p.17).

There may be training programs for mentors. A National Principals Mentoring Certification Program, created in US by the National Association of Elementary School Principals and Nova Southeastern University (NAESP/NSU), is used in Nova Scotia where current principals are trained to become *master artisans* who can "guide, nurture and support" new principals. Time is the most significant constraint in good mentoring (Hall, 2008) but a second level of certification is becoming mandatory in some US states. In Louisiana, for example, a second level certificate requires completion of an induction program and development of a portfolio.

Ideally, new Inuit principals can work with experienced Inuit administrators. Mentoring relationships established between new Inuit principals and experienced Qallunaat administrators,

requires negotiation of power relations (Walton et al., 2005). In New Zealand, Hook, Waaka, and Raumati (2007) argue that compromise is needed between Māori and Pākehā frameworks: mentoring from within a Māori framework, "forces us to switch our perspective" (p. 4). In Nunavut, non-Inuit mentors may become "quite bewildered and uncomfortable" when their Inuit mentees take time to reflect and think in silence" (Government of Nunavut, 2003, p. 18).

Inuit educators are expected to be "experts on Aboriginal knowledge and culture, advocates for improving Aboriginal education, liaisons for all Aboriginal parents and communities, and expert at solving the problems of Aboriginal students, their parents, and communities based on the premise that because they are Aboriginal, they should know" (Archibald, Glickman, and McKinnon, 2005, p. 124). New Inuit principals need support as they work out a balance between these demands and their professional requirements. In Australia, a National Aboriginal Principals Association (NAPA) has been formed. This connects an estimated 70 or more Aboriginal principals at the primary and secondary school levels from across the country. One objective is to "avoid them stressing out and leaving the place. We need to let them know they are wanted" (Government of Australia).

Leadership Styles

In his literature review, Lashway (2003) finds no research correlation between leadership programs and principal effectiveness. This may be in part because successful principals use a diversity of leadership styles. As Gurr and Drysdale (2005) found in their case studies of principals in three successful Australian schools, "educational leadership makes a difference in different ways" (p. 17).

In two large studies, however, a distributed approach to leadership was connected with school reform (Copland, 2003; MacBeath, 2006). Copland (2003) identifies three characteristics of this approach. In summary, these suggest that distributive leadership is a collective activity, involves the spanning of tasks and responsibilities beyond traditionally defined organizational roles, and rests on a base of expert rather than hierarchical authority. Copland notes, as does Wright (2008), that the principal frequently acts as catalyst for school changes whose implementation becomes a shared responsibility.

These descriptions resonate with accounts of Aboriginal leadership. Smith (2004) writes that Māori leadership should not involve someone standing in front, at a distance, but rather, "someone who is deeply grounded and deeply embedded in a community" (p. 12). A new Aboriginal principal in Aklavik exemplifies a successful shared leadership approach (Lewthwaite, 2007). Fletcher, Mckennitt and Baydala (2007) describe an Aboriginal community where, "members of the working committee, community members and Elders assumed and relinquished leadership roles according to their knowledge, skills, areas of expertise, and what they believed they were best able to contribute to the project" (p. 26).

A participant in Kotowich-Laval's (2005) research said that, "the leadership training they are talking [about] is to become a leader the same way" (p. 74). Hale and Moorman, (2003), however, claim that, "all aspects of the school leadership issue . . . are on the table and are being scrutinized" (p. 1)

The School Environment

In Richmond Road School in Auckland, minority students achieved greater success when the principal worked to establish family groupings or rōpū instead of age-determined classes. In part this was attributed to, "the cultural continuity of this learning environment with the backgrounds of many of the minority students at the school" (May, 1994, p. 75). Tompkins (1994), as principal of Anurapaktuq School, created family grouped classrooms where, "caring became an important ingredient" (p. 70). The principal of a Zuni school in New Mexico attributes success to many factors but, "a key change was the move to a 4x4 block schedule where students attend fewer classes for longer periods on alternating days" (Oakes and Maday, 2009, p. 6). In Australia, McGinty (2002) writes, "if we really want to change the participation patterns of Aboriginal people in schools, then schools have to change as well" (p. 2).

Inuit educational leaders are re-thinking the environments and structures of their schools (Annahatak, 1985; Arnaquq, 2008; Government of the Northwest Territories, 1996; Government of Nunavut, 2008, Metuq, 2009) and there is growing recognition of the need for schools to change and of, "the central role of an Aboriginal perspective on learning that is integral to the well-being of First Nations, Inuit and Métis communities" (Canadian Council on Learning, 2009, p. 60).

Policy and Governance

Funding and Accountability

Bell et al. and Fulford et al. each conclude their research in ten schools by identifying critical issues. The need for adequate, stable funding is a predominant concern. Fulford et al. argue that funding formulas "need to be adapted to the unique situations found in remote and northern communities" (p. 330). Carr-Stewart and Steeves (2009) make similar recommendations in their analysis of First Nations education. In a broader context, in Australia McGinty (2002) writes "the ability to tap into funding sources is vital for capacity enhancement" (p. 14). The first recommendation in Archibald, Glickman and McKinnon's (2005) description of Aboriginal teacher education students is for a funded outcome action plan to support enrollment and graduation of Aboriginal teachers as well as implementation of policy to establish program benchmarks. The stability and long-term assurance of adequate funding is a necessary condition for success in building educational capacity.

Accountability and tracking of student progress are other issues raised by Fulford et al. Policy-makers are asked to "articulate an accountability framework that defines the relationships

and responsibilities of all educational stakeholders for the provision of educational equity and excellence for all Aboriginal students" (Fulford et al., 2007, p. 342).

Administrative Training

Cherubini and Hodson (2008, p. 5) believe that change begins with Boards of Education who will "learn, commit and sustain" necessary resources, hold schools accountable for enacting cultural change and ensure the meaningful involvement of Aboriginal people as changes are made. Fulford et al. recommend the provision of educational leadership training and technical assistance for local band councils and school boards responsible for Aboriginal education. A key recommendation in a review of Māori leadership is similar: the establishment of a Māori Leadership and Governance Centre that "would cater to all Māori but specifically for all people who sit on Māori committees, trusts, and boards (Mead et al., 2005, p. 34). Mead et al. perceive a need to develop a small elite group of leaders and they recommend the provision of advanced educational training, "for those identified as having high potential for assuming top-tier positions" (p. 34).

Small Initiatives

Small contributions from governments and other sources may also help to catalyze change. Awards for excellence in leadership in Indigenous education were established in Australia in 2003. In 2007, it was estimated that more than 1100 Indigenous students across Australia had benefitted from the actions of 18 award winning schools. The Queensland government's Indigenous Media Strategy to encourage Indigenous people to consider commercial media careers may help educators by increasing the self-respect of students who now see themselves reflected in the mainstream media.

A policy statement acts as a lens through which possible actions are examined. When Saskatchewan Public School representatives met with a cultural advisory committee, they were advised to create standards, such as anti-racist education, for all schools. In PEI, a school board's policy includes the goal that, "we will provide a safe and caring learning environment in which all students have the opportunity to reach their potential and to face the future with confidence" (Eastern School District, 2010).

Developing the Capacity of Teachers

The Need for Aboriginal Teachers

Cherubini (2008) writes that, "teachers, particularly Aboriginal teachers, are key to improving Aboriginal education and by extension the communities in which they live" (p. 43). In Schwab's (2001) opinion, "the impact of Indigenous staff on student self-esteem is almost incalculable….There is no greater sign of respect for Indigenous culture than the presence of Indigenous staff" (p. 78). Tompkins (1998), as principal of Anapurnaq School, found that, "one

of the most significant changes, and one that had a great effect on programming, was the dramatic increase in the number of Inuit educators in the school" (p. 39).

Identifying and Supporting Potential Aboriginal Teachers

Archibald, Glickman and McKinnon (2005) carried out an extensive survey of Aboriginal teacher education students. They also interviewed experienced Aboriginal and non-Aboriginal educators. One recommendation was "to create personally oriented mentoring and recruitment initiatives for high school students" (p. 14). They proposed identification and encouragement of able students whose skills would be augmented. The Royal Commission on Aboriginal Peoples (RCAP, 1996) recommended that teacher career efforts begin even earlier, in elementary grades.

Young people are more likely to stay in school and aspire to further education if they have the encouragement of teachers, family, and community members. In an Australian survey of Aboriginal teachers, each interviewee "identified the importance of the interest and care of a specific teacher at school that encouraged them to finish school and consider a future career path. This teacher, unlike others, believed that they were capable of succeeding and 'went the extra mile' to help them" (Burgess, 2008, p. 20). In his review of the work of three Australian schools that successfully engaged Indigenous students, Schwab (2001) concluded that each gave students, "a sense that they can affect their own futures, that they have the power to change their lives" (p. 80). Self-belief is linked with academic achievement by researchers such as Rasmussen et al. (2009).

Hallett (2005) connects school attrition rates with students' sense of "cultural continuity" itself related to a community's control of its own affairs and retention of its language. A report from the Canadian Council on Learning (CCL, 2009) notes, "the importance of life-long learning within Aboriginal communities and the value of strong family and community bonds in facilitating life-long learning" (p. 60). Fulford et al. recommend that, "necessary resources and technology be provided so that, wherever possible, all Aboriginal students have access to secondary education in their home communities" (p. 344).

Educating Teachers

Cost is a major barrier to graduate training for young Aboriginal teachers. Adequate financial support is necessary in the form of government funding as well as bursaries, grants, and tuition awards from educational institutions. (Archibald, Glickman and McKinnon, 2005). In New Zealand, the Māori Education Trust draws on government funds and private bequests to offer a wide range of secondary school and tertiary scholarships that enable Māori to achieve their cultural, spiritual, social, political and economic aspirations.

Geographic distance is also a barrier. Fulford et al. (2007) recommend that teacher education programs be available in Aboriginal communities and that Aboriginal school support staff "be encouraged to acquire teacher qualifications and credentials in incremental stages" (p.

343). They cite the Cree School Board's agreements with two universities that enable pre-service teachers to stay in their communities for part or all of their studies. A US high school offers college-transferable courses at a local campus. (Oakes and Maday, 2009). The M.Ed. program of the University of Prince Edward Island (UPEI) is now offered within the territory of Nunavut (Tompkins, McAuley & Walton, 2010).

Lack of access to comprehensive university education in the Arctic continues to be a failure in the development of human capacity in the North (Poelzer, 2009). Canada is the only circumpolar state without a university in its Arctic region. Russian and Nordic universities demonstrate the extent to which Indigenous and mainstream learning systems can enrich one another (Poelzer, 2009).

Graduate studies require a substantial investment of time and energy from students. For many Inuit students with roots in a colonial past and often troubled school experience, there are also deep insecurities to overcome. It can be difficult to find the academic and personal confidence needed for postgraduate study (Walton et al., 2010). Early support from family and teachers, mentoring support, ease of access to postgraduate work and funding are essential. Qiocho and Rios (2000) note that peer group support is centrally important as minority teachers work towards their credentials.

Post-secondary Education

The transition from high school is easier when post-secondary programs are inclusive and meaningful. Successful post-secondary programs for Aboriginal students include curricula and pedagogy reflective of Aboriginal culture and values as well as transitional supports, presence of Elders, Aboriginal resources, Aboriginal instructors and staff members, and community-based programs (Preston, 2008, p.17).

Courses in Aboriginal studies and information about culturally responsive approaches to teaching core subjects should be mandatory for all teacher education students so that non-Aboriginal teachers will be equipped to teach Aboriginal students. (Archibald, Glickman and McKinnon, 2005). Agpo (2007) recommends that these courses be grounded in "cross-cultural competence" (p. 13). Fulford et al. (2007) advocate a focus on the jurisdictional and policy frameworks of Aboriginal education as well as pedagogical content.

Aboriginal language programs can be transformative (Archibald, Glickman and McKinnon, 2005). These courses require funding and support from Departments of Education and institutional management but they are "an important ingredient in fostering reconciliation within universities, schools and the community" (Mooney, Halse, and Craven, 2003, p. 7). This is particularly significant, even crucial, since "many students entered undergraduate degrees with overt but deeply entrenched prejudices against Aboriginal culture and people" (p.7).

University instructors "need cross cultural training and should experience cultural immersion opportunities" (Aboriginal Research Network, 2008, p. 37). A recommendation of the

Alaska Native Knowledge Network (ANKN) reads, "to the extent that we teach the way we are taught, university faculty and others associated with the preparation of teachers should participate in cultural immersion programs themselves to develop the insights and sensitivities they intend to impart to their teacher candidates" (1999, p. 18).

A report from the ANKN recommends that all teacher preparation candidates be given in-depth experiences in working with students whose cultural backgrounds are different from their own. Candidates who wish to teach in rural Alaska, for example, should be given, "extended opportunities to complete an internship in a rural school/community setting." They should also be provided with on-going support from teacher education programs during their first year of teaching. (ANKN, 1999, p. 17). In 1995 Arlene Stairs raised the possibility that a field-based apprenticeship course might become a component of teacher education. This approach is now used extensively in some Inuit regions.

Mentoring and In-service

The need for early professional mentoring was made evident by the high attrition rate of new teachers and the components of mentoring are well established. The relationship between mentor and mentee is one of "teamwork, mutual respect and cooperation—in which both parties give and receive, each in their own unique ways" (Government of Nunavut, 2003, p. 9). Five phases are identified in a document from NWT: pre-orientation; orientation; systematic sustained supports and professional development. Sustained supports include a formal mentor program, communication networks, team planning and master teacher observations (Government of the Northwest Territories, 2000). An ANKN report recommends that all new teachers should, "be provided with a cross-cultural orientation as part of the districts regular in-service program" (1999, p. 17). This orientation would include a week-long camp experience and the assignment of an experienced Native teacher-aide, an Elder, and a student as mentors throughout the first year of teaching.

Mentoring initiatives for teachers are comparable to those for principals though teachers are more likely to have mentors in the same school. This can be an advantage but Cherubini (2008) points out that Aboriginal and non-Aboriginal teachers may "function in school cultures on racist, discriminatory, and unwelcoming terms" (p. 42). Archibald, Glickman and McKinnon (2005) also note that role expectations for Aboriginal teachers can result in, "isolation, systematic racism and stress overload, thereby hindering the retention of the few Aboriginal teachers who teach in public school districts" (p. 48). They create a daunting list of roles that Aboriginal educators may be expected to perform and recommend the establishment of an Aboriginal teachers' network to facilitate mentoring programs, engage with teacher action research, and provide communication opportunities. Many of their research participants felt that school districts should be responsible for developing mentorship and support programs for new and continuing Aboriginal teachers.

Curriculum

Bishop and Glynn (1999) note that Māori don't accept mono-cultural educational solutions. Their cultural aspirations, "insist that we identify from within the Māori culture the roots and routes for successful educational intervention strategies" (p. 72). The twin elements of cultural strength and educational achievement thread through literature about Aboriginal curriculum. A third thread is recognition of different learning styles. Goddard et al. (2003), for example, suggest that cooperative learning, sharing, visual, and oral approaches are important for Native American learners although they caution against easy generalizations about the homogeneity of students or ethnicities; "native youth" they point out, "are not a completely homogeneous group" (p. 229). This is confirmed by Castagno and Brayboy (2008) who found that successful programs are not necessarily transferable across ethnic difference. When they brought the KEEP program, highly successful with Hawaiian students, into a Navajo schooling context similar results did not ensue. They conclude that, "pedagogy and curriculum must be developed with the local culture in mind" (p. 979).

Battiste (2005, p. 4) describes Indigenous knowledge as an adaptable, dynamic system that changes over time and not the body of static data that is signified by the Eurocentic phrase "traditional knowledge." The involvement of local community Elders and members in curriculum development is a way to ensure that cultural elements are vibrant and relevant for students in that community. The ANKN calls for the participation of Elders in all aspects of schooling. Battiste (2002) proposes the establishment of virtual colleges made up of Elders, with others, who will be able to decide matters relating to curriculum and instruction. Graham and Ireland (2009) recommend creation of a *St'å'imc Elders and resource People Academy* to, "increase the degree to which Elders and resource people are involved in Lillooet area schools" (p. vii).

ANKN guidelines incorporate the different curriculum threads when they say that good teachers: build upon prior knowledge; draw upon multiple forms of intelligence; use experiential approaches; and "engage in extended experiences that involve the development of observation and listening skills associated with traditional learning ways of Native people" (ANKN, 2003, p. 5). An Inuk parent-participant told Lewthwaite et al. that, "I want them [my children] raised to be proud of who they are and learn things that are important to their lives in the future, both if they live here or away" (Lewthwaite, McMillan and Renaud, 2010, p. 16). Programs such as *Inuuqattigiit,* "curriculum from an Inuit perspective", are designed to link traditional and Western knowledge. Topmkins' work as principal in Anurapaktuq demonstrated that, "the more relevant the program . . . the less reason students had to misbehave" (p. 56).

There are promising initiatives in core subjects of science and mathematics. Three communities combined the processes and experiences of both worlds in a successful science education project in Nunavut that involved consultation with community members and Elders (Lewthwaite, McMillan and Renaud, 2010). In Alaska, the *Building a Fish Rack* module of a

culturally- based, inquiry-oriented math curriculum improved mathematics performance of rural Yup'ik Eskimo students (Lipka et al., 2005). In BC, Nicol, Archibald, Kelleher and Brown (2006) collaborated with the Haida Gwaii to create a culturally responsive mathematics curriculum and transform the teaching and learning of mathematics.

Language

Lewthwaite et al. (2010) encountered the difficulty of unfamiliar science vocabulary but language use and retention is a general and critical concern. The Canadian Child Care Federation (2005) conveys its significance as, "the main link to identity, both personal and collective" (p. 7). It is a repository of history that carries the songs, humour, stories, kinship structures, and ritual, provides a connection to the land and offers, "a unique view of the world" (p. 7). In their picture of the future they wished and hoped for, Inuit women from across Canada described "a place where language and culture have been restored" (Nunavut Literacy Council, Labrador Literacy Information & Action Network & Frontier College, 2001, p. 22). Language loss was a first concern for each of their four workshops.

Inclusion of language in the curriculum carries across generations and helps revitalize it in the community (McCarty, 2003). Tompkins (1998) in Anurapaktuq adapted the 'language across the curriculum' approach used in NWT. Her theme planning approach throughout the school, "allows a structure around which English and Inuktitut can become languages of instruction and breaks the notion of either language being a 'language program'" (p. 83).

Stiles (1997) examined indigenous language programs in four countries: Cree Way in Canada; Hualapai in Arizona; Te Kohanga Reo (Māori) in New Zealand; and Puana Leo in Hawaii. In each case, school retention rates have improved and children are, "succeeding further within the educational system as a result of their exposure to bilingual/ bicultural education" (p. 258). This reflects McCarty's finding that research is, "unequivocal on one point: students who enter school with a primary language other than the national or dominant language perform significantly better on academic tasks when they receive consistent and cumulative academic support in the native/heritage language" (p. 149). McCarty's findings indicate that native language schooling should continue for at least four to seven years. The Canadian Education Statistics Council (2009) review of research findings notes that, "learning to read and speak in more than one language increases cognitive, academic, social and economic pathways for Aboriginal children" (p. 34).

For Stiles (1997), planning with the community and problem-solving with community support are 'grounding elements' and key to prolonged success because culture and language are interwoven. There may be difficulties. Parents may feel that English is the language of success, teachers may not connect an Aboriginal language with academic performance, and resources and texts may have to be created. Fluent speakers are scarce and must have teacher training, so one positive outcome may be the development of, "a critical mass of Native educational

practitioners" (McCarty, 2003, p. 152). The majority society can help by providing teacher training as well as research foundations, linguistic training, and pedagogical expertise. Stable, consistent funding is of major importance. McCarty and Dick (1996) note that bilingual/ bicultural education at Rough Rock School "has fluctuated in response to federal funding and language policies" (p. 8).

Both McCarty (2003) and Stiles (1997) refer to the importance of beginning language learning at an early age. McCarty cites Māori pre-school language nests and Hawaiian immersion pre-schools, Navajo Head Start, and Pueblo immersion programs as examples of language revitalization initiatives that have shown significant academic benefits for students and language retention benefits for communities. In his report to the Nunavut Department of Education, Martin (2000) argued for a 20-year language plan to achieve, "a fully functional bilingual society in Inuktitut and English" (p. 2). One recommendation was for an Inuit language Head Start type pre-school program. For communities with severe language loss, he proposed an immersion model similar to that already established in Kugluktuk. Other recommendations also resonate with research literature: resources for training of employment of Inuit teachers; Inuit language curriculum and resources; community consultation and input.

Technology

Rajasingham (2001) describes a successful initiative in New Zealand to link rural Māori students with national and international databases and teachers. In Canada, Kayas College offers virtual education to members of the Cree nation. Part of its mandate is to address concerns about language and culture. The Labrador museum, McAuley's (2004) use of Knowledge Forum on Baffin Island, and distance education courses offered in Nunavut by the University of Prince Edward Island as part of its M.Ed. program all demonstrate the potential of virtual education to overcome barriers of distance and extend access to education. At the same time, Aporta and Higgs (2005) caution against the negative impact that technology can have on the further erosion of Inuit values and cultural practices. A loss of traditional way-finding skills, they argue, has come from the use of technological mapping devices such as Global Positioning Systems (GPS).

The need for stable, long-term, consistent and adequate funding is a major concern throughout the research literature. The most recurrent themes are: revitalization and transmission of culture and language; preparation of Inuit teachers and principals; and a curriculum that builds on Inuit knowledge and ways of learning. McAuley's work (2004), in particular, demonstrates that cultural sensitivity and the use of technology need not be incompatible. Virtual ways of learning may be valuable and their introduction may be inevitable. The challenge will be to ensure that they help and do not impede progress with the issues evident in this review and that they are created by Inuit educators in consultation with their Elders and communities.

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