

Cultivating Education for Cultural Sustainability in Alaska Native Communities

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The following article focuses on the struggle for cultural sustainability by Native people in Alaska and how the educational systems are responding to the issues involved. It will draw upon work that has been done by the Alaska Native Knowledge Network at the University of Alaska Fairbanks, documenting cultural and environmental changes that are impacting the livelihood of a people who are dependent on the surrounding landscape to maintain a subsistence way of life. The article provides concrete examples from a particular cultural and geographic context that illustrates how principles of sustainability can be translated into practice.

Throughout the past decade, indigenous peoples have assumed a prominent role as significant partners in the pursuit of a broader and deeper understanding of the importance of cultural and biological diversity for the survival of human beings and the ecosystems on which they are dependent. Most salient in this partnership has been the substantial underlying differences in perspective, some political, some ideological, but most fundamental and intractable are the differences in world views, between those of the relative newcomers to the area (i.e. the miners, loggers, oil field workers, commercial fisherman, tourists, and even the occasional scientist), and the Native people with roots in the land that go back millennia. But no longer can these differences be cast in simplistic either/or terms, implying some kind of inherent dichotomy between those who live off the land vs. those tied to the cash economy, or traditional vs. modern technologies. These lines have been blurred with the realities that indigenous cultures are not static, and western structures are no longer dominant. Instead, we now have a much more fluid and dynamic situation in which once competing views of the world are striving toward reconciliation through new structures and frameworks that foster co-existence rather than domination and exploitation.

The current state of affairs in the relationship between indigenous and non-indigenous peoples is still very tentative however, and much of the work is on-going, with legislatures, commissions, task forces, working groups, conferences, workshops, symposia and seminars convening throughout the globe to craft new laws, principles, guidelines, strategies and structures to fit the much maligned “new world order.” So what is it that indigenous people bring to these deliberative arenas that differs from the work and perspectives of other interested parties, besides an intrinsic dependence on the sustainability of the natural resources for their physical and cultural survival? I will touch on a few of the contributions that indigenous people are bringing to the table, all of which serve to complement and add to, rather than displace the knowledge base that continues to be generated by western scientific means.

Cultural Sustainability, Climate Change and Indigenous Education

The Arctic region as a whole has been at the forefront in documenting the impact of climate change on the people and communities that occupy the northern latitudes. In 2005 the Arctic Council, an international NGO with representation from across the Arctic region, published the Arctic Climate Impact Assessment which detailed the changes that are taking place and the impact those changes are having on the physical, socio-economic and political structures of the region (Arctic Council, 2005). Among the areas in which changes are being observed are abnormalities and fluctuations in the availability of subsistence foods brought

about by changes in seasonal weather patterns accompanied by the transport and accumulation of contaminants from local and distant sources. Such changes are of particular consequence to the indigenous populations whose life and livelihood depends on a reciprocal relationship with the surrounding environment. As Angayuqaq Oscar Kawagley, a Yupiaq Elder/Scholar has put it:

Alaska Natives have always expected fluctuations from year-to-year in weather, hunting conditions, ice patterns and animal populations, but since the 1970's they have noticed many indicators of major climate change (Kawagley, 2006).

As key partners in the documentation of changes that are occurring, one of the most important contributions that indigenous people are bringing to the research and policy-making arenas is a long-term temporal dimension, that is a perspective spanning many generations of observation and experimentation, which enriches the relatively short-term, time-bound observations of the itinerant scientists. As a result, long-term patterns and cycles that are not evident in the biologist's toolkit and data base of detailed in-depth short-term observations can be factored into the equation for management purposes. In one meeting an Inuit Elder chided fish and game biologists who were proudly displaying charts showing 30 years of data from polar bear observations along a stretch of the Beaufort Sea, indicating that the Inupiaq record went back 300 years, and that just because it hadn't been written down didn't mean it was any less reliable.

Closely coupled with this long-term temporal dimension is another important contribution that indigenous ways of knowing provides, that of pointing out the interconnectedness of all the elements that make up an ecosystem, including the human element. While western scientists tend to specialize and conduct research in one component of an ecosystem at a time, the indigenous observer is immersed in the system and thus is more likely to recognize how the various components relate to, interact with, and depend on one another over time and across species. Within an indigenous context, these observations can constitute a quite sophisticated look at the whole, while the scientists lens affords only a "crude look at the whole" (Gell-Mann, 2009).

Another important contribution that indigenous people are making to our understanding of sustainable development in the context of rapid change is the relationship between resource management regimes and the dynamic nature of cultural systems. Unlike the western observers tendency to freeze indigenous cultural systems in time, as though they existed in some kind of idealized static state destined never to change, indigenous people themselves, as a matter of cultural survival have been quick to adapt and adopt new technologies and to grasp the "new world order." While retaining a keen sense of place and rootedness in the land they occupy, they have not hesitated to take advantage of new opportunities to improve their quality of life and the efficiency of their lifestyle. This is done, however, within their own framework of values, priorities and worldview, so that the development trajectory they choose is not always the same as what outsiders might anticipate, or even recognize.

The recognition of cultural systems as being dynamic and ever-changing in response to new conditions has enormous implications for sustainable development, especially where demographic and climate changes and technological innovations have combined to put pressure on available resource populations beyond their carrying capacity. Nowhere has this been more contentious than in the regulation of the Bowhead whale stock available to Inuit hunters along the northern and northwest coasts of Alaska. For example, when Native people

in northwest Alaska had to establish a priority between maximizing profits in their role as Native corporate shareholders and sustaining the subsistence whale hunt that would potentially be disrupted by ships bearing ore from their own world class lead/zinc mine passing through the migration route of the whales, they chose to place the hunting of the whales as the first priority, and established a panel of subsistence hunters from nearby villages who had the power to shut down the mine if necessary while the communities dependent on the whales conducted their hunt. Their multinational partners in the mining venture were not necessarily in agreement with this decision, but in this case, the resource and thus the decision, was in the hands of residents of the region.

Operating in the international arena is becoming familiar ground for indigenous people, with a growing political and scientific sophistication on the indigenous side of the table. In the on-going struggle between the scientists of the International Whaling Commission and those of the Alaska Eskimo Whaling Commission, the disputes have been as much over the cultural basis of the technology employed in the boats, harpoons and spotting procedures as they have been over the conflicting estimates of the Bowhead population's size. Similar disputes over "traditional" vs. "modern" technology have been endemic to the efforts of the Eskimo Walrus Commission, the Inuvialuit Beluga Whale Committee, the Alaska Sea Otter Commission, and the numerous other indigenous hunting and regulatory organizations that have been established to deal with the national and international regulatory regimes that impact the lives of people dependent on subsistence resources for their livelihood. Most significant and far-reaching in that regard has been the adoption of the United Nations Declaration of the Rights of Indigenous Peoples, which is now being used to apply international human rights principles and benchmarks to address localized issues (UNDRIP, 2007).

Which brings me to the remaining dimension I would like to touch upon in illustrating the contribution that indigenous people are making to research and educational issues associated with sustainable development in Alaska, and that is the qualitative dimension, particularly relating to the impact of localized decisions on the sustainability of family, community and the cultural systems reflected therein. Whereas the western-derived regulatory regimes for fish, game and marine mammals tend to rely on individually allocated mechanisms, such as quotas and licenses, for the management of harvests, indigenous people are more likely to seek a community-oriented approach. For example, when the Arctic caribou herd in the Kobuk river drainage of northwest Alaska went into a precipitous decline a decade ago, the local regional Native organization petitioned the Alaska Department of Fish and Game to allocate the reduced hunt by community rather than by individual, because local hunting practice designated expert hunters in each community to bring in the meat, so that everyone from the single mothers to the Elders would have ample food. Unable (or unwilling) to alter the regulatory regime to accommodate this request, Fish and Game enforcement officials chose instead to look the other way, so long as the total take of caribou didn't exceed the total of the individual allocations. This incident has led the Alaska Department of Fish and Game to place a renewed emphasis on its Subsistence Division, which has been staffed as much by anthropologists as by the biologists who typically rule in that domain.

Finally, along with the emphasis on sustainability of community, indigenous world views are more inclined to see humans as a subset of the natural world in which they are precariously situated, rather than to see nature as a repository of resources for human exploitation. Though this orientation to the natural world is often misunderstood and misrepresented in non-indigenous contexts, its spiritual and tangible connotations are very much a continuing aspect of the Alaska indigenous subsistence livelihood, and thus underlie indigenous

perspectives on the sustainability of all resources. The effect of such a holistic perspective is evident in the following observations on a Yupiaq world view by Kawagley:

We, the *Yupiat*, believe that the *Ellam Yua* (God) is in Nature. Therefore Mother Earth has a culture. This is why we as Native people emulate nature. We see God in Nature and know that everything that Nature has made is a vehicle for teaching us how to make a life and a living for ourselves. Our subsistence way of living is a process of actualizing a lifeway that encourages altruism. Altruism requires that we give utmost respect and honor to everything of Nature as each element does its job as required by the *Ellam Yua* (Kawagley, 2011).

When examining such issues in the circumpolar region, we must consider the historical context, particularly in terms of who is determining what the rules of engagement are to be, and how those rules are to be implemented. In the colonial era, resources were viewed as subject to the wishes and imperatives of a nation-state form of government and a market-oriented economic system, with little thought given to the implications for the traditional knowledge, beliefs, skills and practices of the colonized indigenous societies.

As indigenous people have begun to assert their “aboriginal rights” to self-determination and self-government and assume control over various aspects of their lives, one of the first tasks they have faced has been to reconstruct the institutional infrastructures and practices that were established by the colonial bureaucrats, to make them more suitable to their needs as a people with their own worldview, identity and history. In some instances, the initial tendency has been to accept the inherited structures without question and perpetuate the systems that were in place before, including their implicit forms of decision-making, social stratification and control. In most cases, however, there have been deliberate efforts to modify the colonial institutions, or create new institutional and political structures (e.g., the Inuit Circumpolar Conference, the Alaska Eskimo Whaling Commission, the Eskimo Walrus Commission, along with various “co-management” structures), such that indigenous cultural forms and values are taken into consideration wherever possible. The inherent tensions involved in these undertakings are illustrated repeatedly by the often conflicting events and actions surrounding cultural, environmental and resource management issues that impact all aspects of the societies involved.

The incongruities between western institutional structures and practices and traditional cultural forms have not been easy to reconcile. Even when all the resources of a national government are turned to the task, the complexities that come into play when two different cultural systems converge present a formidable challenge. The specialization, standardization and compartmentalization that are inherent features of western bureaucratic forms of organization are often in direct conflict with practices in indigenous societies, which tend toward collective decision-making, extended kinship structures, ascribed authority vested in elders, flexible notions of time, and traditions of informality in everyday affairs. It is little wonder then that resource management structures, which often epitomize Western bureaucratic forms, have been found wanting in addressing the sustainable development needs of traditional societies.

Major cultural and environmental changes are already profoundly affecting the lives and culture of peoples who depend on traditional ways of acquiring and storing their food. The observations of Alaska Native people on climate change today not only mirror scientists’ predictions, but provide firsthand evidence that the effects are being felt now. The important role of indigenous people as collaborators in monitoring the effects of climate change is

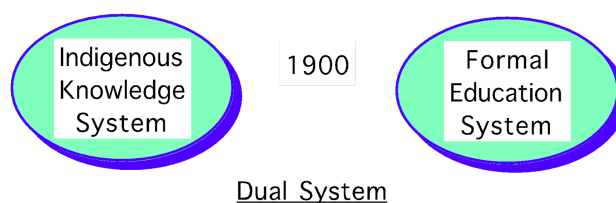
evident in the following comments by Mark Nuttall, editor of a special issue of *Indigenous Affairs* focusing on “climate change and indigenous peoples:

Indigenous peoples must be assured that they will play a key role in the regional and global dialogues that will determine the kind of responses to climate change and the social and economic changes that will take place in their homelands. Recognition of human, cultural, and linguistic rights of indigenous peoples is a prerequisite for their effective participation in policy discussion and contribution to international decision-making that will influence new forms of economies, patterns of global consumption, governance and livelihoods necessary to meet the challenge of climate change (Nuttall, 2008).

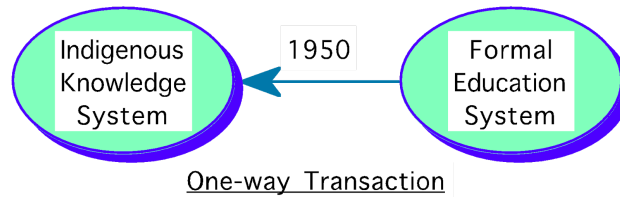
The remainder of this article will focus in on the role that education is playing in response to the large- and small-scale cultural, educational and environmental changes that are underway in Alaska.

The Formal Education System in Alaska

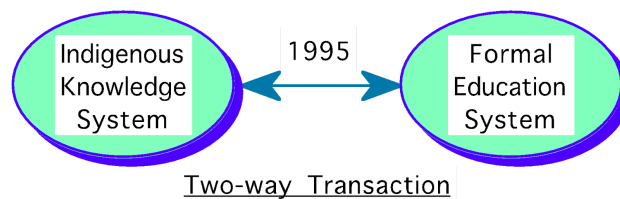
Formal education is still an evolving, emergent system that is far from equilibrium in Alaska, thus leaving it vulnerable and malleable in response to on-going changes in the surrounding environment. The advantage of working with systems that are operating “at the edge of chaos” is that they are more receptive and susceptible to innovation and change as they seek equilibrium and order in their functioning. Such is the case for many of the educational systems in rural Alaska, for historical as well as unique contextual reasons. From the time of the arrival of the Russian fur traders in the late 1700’s up to the early 1900’s, the relationship between most of the Native people of Alaska and education in the form of schooling (which was reserved primarily for the immigrant population at that time) may be characterized as two mutually independent systems with little if any contact, as illustrated by the following diagram:



Prior to the epidemics that wiped out over 60% of the Alaska Native population in the early part of the 20th century, most Native people continued to live a traditional self-sufficient lifestyle with only limited contact with fur traders and missionaries. The oldest of the Native Elders today grew up in that traditional cultural environment and still retain the deep knowledge and high language that they acquired during their early childhood years. They are also the first generation to have experienced significant exposure to schooling, many of them having been orphaned as a result of the epidemics. Schooling, however, was strictly a one-way process at that time, mostly in distant boarding schools with the main purpose being to assimilate Native people into western society, as practiced by the missionaries and school teachers (who were often one and the same). Given the total disregard and often condescending attitude toward the indigenous knowledge and belief systems in the Native communities, the relationship between the two systems was limited to a one-way flow of communication and interaction up through the 1950’s, and thus can be characterized as follows:

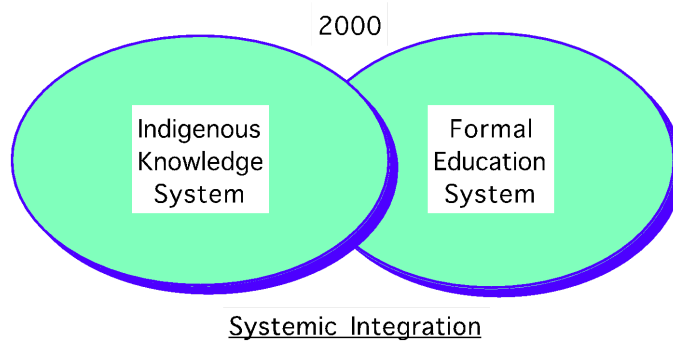


By the early 1960's, elementary schools had been established in most Native communities, and by the late 1970's, a class action lawsuit had forced the state to develop high school programs in the villages throughout rural Alaska. At the same time (in 1976), the federal and state-operated education systems were dismantled and in their place over 20 new school districts were created to operate the schools in rural communities. That placed the rural school systems serving Native communities under local control for the first time, and concurrently a new system of secondary education was established that students could access in their home community. These two steps, along with the development of bilingual and bicultural education programs under state and federal funding and the influx of a limited number of Native teachers, opened the doors for the beginning of two-way interaction between the schools and the Native communities they served, as illustrated by the following diagram depicting Native education by 1995:



Despite the structural and political reforms that took place in the 70's and 80's, most schools have continued to produce a dismal performance record for Native students by most any measure, and Native communities continue to experience significant social, cultural and educational problems, with most indicators placing communities and schools in Alaska at the bottom of the scale nationally. While there has been some limited representation of local cultural elements in the schools (e.g., basket making, sled building, songs and dances), it has been at a fairly superficial level with only token consideration given to the significance of those elements as integral parts of a larger complex adaptive cultural system that continues to imbue peoples lives with purpose and meaning outside the school setting. While there is some minimum level of interaction between the two systems, functionally they remain worlds apart, with the professional staff overwhelmingly non-Native (95% statewide) and with a staff turnover rate averaging 30-40% annually.

With these considerations in mind, the University of Alaska Fairbanks has sought to serve as a catalyst to promulgate reforms focusing on increasing the level of interconnectivity and synergy between the formal education systems and the indigenous knowledge systems of the communities in which they are situated. In so doing, the emphasis has been on bringing the two systems together in a manner that promotes a symbiotic relationship such that the two previously separate systems join to form a more comprehensive holistic system that can better serve all students, not just Alaska Natives, while at the same time preserving the essential integrity of each component of the larger over-lapping system. The new interconnected, interdependent, integrated system Native people are seeking to achieve may be depicted as follows:



In May, 1994 the Alaska Natives Commission, a federal/state task force that had been established two years earlier to conduct a comprehensive review of programs and policies impacting Native people, released a report articulating the need for all future efforts addressing Alaska Native issues to be initiated and implemented from within the Native community (Alaska Natives Commission, 1994). The long history of failure of external efforts to manage the lives and needs of Native people made it clear that outside interventions were not the solution to the problems, and that Native communities themselves would have to shoulder a major share of the responsibility for carving out a new future. At the same time, existing government policies and programs would need to relinquish control and provide latitude and support for Native people to address the issues in their own way, including the opportunity to learn from their mistakes. It is this two-pronged approach that is at the heart of the current educational reform strategies for cultural sustainability—Native community initiative coupled with a supportive, adaptive, collaborative education system.

Forging an Emergent System of Education for Cultural Sustainability

The key agents of change around which the current educational reform strategies have been constructed are the Alaska Native educators working in the formal education system coupled with the Native Elders who are the culture-bearers for the indigenous knowledge system, along with the Native-initiated cultural standards adopted by the Alaska Department of Education. As researchers and Native people continue to document the effects of cultural and environmental change throughout Alaska, educators are using the newly acquired knowledge to develop curriculum resources that will help students better understand the forces that are impacting their lives, both locally and globally. Some examples of these educational responses will be described briefly below.

One National Science Foundation-funded initiative that has international roots but has been specifically adapted to Alaska is the OLCG program (Observing Locally–Connecting Globally), which combines Alaska Native observations of climate change with the observations of western scientists to gain a better understanding of interactions across local to global systems. Detailed information about the program can be found on the UAF web site at <http://www.uaf.edu/olcg/>. In the process of gathering information and insights from elders, students acquire research skills and cultural knowledge that contributes to our understanding of the indigenous knowledge–western science interface.

Another education program that engages students directly with their environment is MapTEACH (Mapping Technology Experiences with Alaska’s Cultural Heritage). The program provides a culturally responsive geo-science outreach curriculum for middle- and high-school students and teachers in rural Alaska. MapTEACH emphasizes hands-on experience with spatial technology including GPS (Global Positioning System), GIS

(Geographic Information System), and remote sensing imagery, used in conjunction with traditional cultural activities. Participating students and teachers work directly with scientists and are presented with a chance to practice real scientific inquiry at a novice level, using real data in a real-world setting (<http://www.mapteach.org/>). A variation on this initiative is a tracking/mapping project in which students in a village school have used satellite data to follow the migration patterns of a nearby Arctic caribou herd on which their subsistence life depends.

A recent addition to the curriculum resources provided for schools is the Arctic Climate Modeling Program. ACMP is a multifaceted program that blends Native Ways of Knowing with contemporary climate modeling tools to engage students in in-depth comparative research on climate change. Schools are equipped with a fully functional weather station that students use to transmit real-time data into a web-based Science Observation Network monitored by scientists at the University of Alaska Fairbanks (<http://www.arcticclimatemodeling.org/>).

Students are taught both from a scientific perspective used by university researchers and from a traditional Native cultural perspective used for centuries by Alaska Native elders. The local and instrumental data gathered by the students is then incorporated into the climate modeling tools to gain greater insights into the climate changes that are underway.

A new program that is currently under development is a permafrost monitoring K-12 outreach program whereby UAF researchers are installing monitoring equipment in boreholes adjacent to schools throughout Alaska, which students then use to report data on the status of changing permafrost conditions in their community (<http://www.uaf.edu/permafrost/>).

Finally, we have been actively engaging students from throughout Alaska in the development of science fair projects that illustrate the complementary relationship between traditional cultural knowledge and western science (<http://ankn.uaf.edu/cosee/>). The science projects are judged by science experts for their scientific merit and by local elders for their cultural merit. These projects have served to increase student interest in science while at the same time enhancing their appreciation of their own cultural knowledge.

Summary

The sustainability of Alaska Native cultures is not as bleak as it once was, as indigenous people themselves have begun to rethink their role and seek to blend old and new practices in ways that are more likely to fit the contemporary conditions of the people being served. Regardless of whether the development goals of a community are directed toward internal quality of life issues or external economic considerations, the steps being taken to improve cultural, community and resource sustainability point toward greater involvement of indigenous people in everything from policy-making to monitoring, and from research to management practices. The actions currently being taken by indigenous people themselves in communities throughout the world clearly demonstrate that a significant “paradigm shift” toward the integration of indigenous knowledge systems and ways of knowing is already well underway, with the emphasis shifting consistently toward a focus on the utilization of local knowledge and people in the decision-making processes.

In summary, the following quote from Oscar Kawagley captures the stance of Alaska Native people in their efforts to come to terms with the effects of cultural, educational and environmental change on their lives:

From the late 1960s and up to the present, Native people have been working diligently to change education so that it accommodates their languages, worldviews, culture and technology. This is a slow healing process for the villages. Our educational mission is to produce human beings at home in their place, their environment, their world. This is slowly being brought to fruition through the efforts of the Native people themselves, with support from others of like thinking.

REFERENCES

For further information on the impact of change on indigenous peoples and the observations that are outlined above, the following recent publications are recommended:

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Following are addresses for web sites with further information related to the issues addressed in this article (including the photos and graphics presented here).

Alaska Native Science Commission
· www.nativescience.org
· www.nativeknowledge.org
Alaska Native Knowledge Network
· www.ankn.uaf.edu

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