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Syntheses of Circumpolar Indigenous Issues, Knowledge, Relations to Education, Science and Mathematics

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The term indigenous is subject to various meanings and interpretations, particularly in lieu of issues arising from post-colonial victimization (Coates, 2004). The term “indigenous people” is commonly used to refer to any group of people who have a long historical presence within a geographic region, typically well before the advent of colonization- and this typically means western colonization. Synonyms of the term indigenous are first peoples, aboriginals, and native. Etymologically speaking, one of the oldest words for “first peoples” is the Sanskrit word *Ādivāsi*, which simply means “earliest inhabitants”, although this term is sometimes used in a deprecatory sense in modern day India.

Paradoxical Definitions

Even though definitions abound, interpretations of the term are connected to power relations within any existing region, in relation to the larger political or national umbrella within which such people are scattered throughout the world (Smith, 1999). For instance certain populations (e.g., Fijians in Fiji, or Bhutanese in Bhutan) are not classified as indigenous even though they are, since the group is in a position of political power, as opposed to say, Uighurs in Xinjiang (China), or Mayans in Central America, who are classified as indigenous largely because they are not in a position of power within the region in question. The majority status of the former group has been changed by forced settlement of Han Chinese in what is termed an autonomous region of China. This suggests that “autonomy” is more of a politically dependent construct as opposed to an idealized construct as stipulated by the United Nations. There are also some groups with a remarkably archaic presence within a region that fall within the definition of “indigenous” but receive no special classification from a modern umbrella State, e.g., Zoroastrians in Iran.

Then, there are also non-Sámi and non-Inuit indigenous peoples of Nordic countries who are not classified as such, but are Norwegians and Swedes, as well as Danes, who have been strongly engaged in circumpolar adventures for some time at both poles. There also do not appear to have been any Inuit on Greenland when the Vikings colonized the west coast, though the Inuit moving up from Russia had managed to displace the Dorset people and take over the islands now part of Canada and then appear to have moved easterly towards the Viking settlements during the last great Arctic warming period (see Morisson, 1971).

Legislative Issues: Non alignment between theory and practice

The status of indigenous people is also tied to legislative bodies such as the United Nations and constitutions of nations that guarantee certain inalienable rights. The paper by Rasmussen on the Canadian Inuit in Nunavut, and the paper by Fyhn, Eira and Sriraman on the Sámi in Norway, highlight some of the legislations in place, and address the non alignment between legislation and implementation. Rasmussen's provocative paper tackles a prescient issue in the Canadian arctic involving the rights of the Inuit to control their school systems and the educational destinies of future generations of Inuit children in Nunavut. Three issues are raised in this article which are related to larger themes addressed in other articles constituting this journal issue, namely

- (1) The abstract notion of autonomy given to an indigenous population with the caveat that key decisions involving educational rights are still governed by vested interests and Central administration far removed from the realities of the indigenous people.
- (2) Minority groups (originally from dominant majorities) within an indigenous population that influence and sway policy.
- (3) Broken treaties and consequences of settlement

The United Nations Resolution 61/295 ratified and adopted by the General assembly in October 2007, lists a declaration of rights of indigenous people. Among the 46 articles in this resolution two key articles brought into focus by the papers in this journal issue are:

Article 20

1. Indigenous peoples have the right to maintain and develop their political, economic and social systems or institutions, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities.
2. Indigenous peoples deprived of their means of subsistence and development are entitled to just and fair redress. (U.N, 2007)

Article 36

1. Indigenous peoples, in particular those divided by international borders, have the right to maintain and develop contacts, relations and cooperation, including activities for spiritual, cultural, political, economic and social purposes, with their own members as well as other peoples across borders.
2. States, in consultation and cooperation with indigenous peoples, shall take effective measures to facilitate the exercise and ensure the implementation of this right.(U.N, 2007)

Article 20 is not implemented the extent it should, but compared to other indigenous areas of the world (e.g., Aboriginal communities of Australia, or the Uighur community of China), the circumpolar regions due to their relative isolation and inaccessibility have been able to maintain a semblance of social systems and institutions within the larger state that allow them to engage in traditional economic activities. This is by and large true of the Inuit, Yup'ik and Inuktitut

communities of Alaska and Nunavut, as well as the Sámi communities of Norway. However if institutions are interpreted to include Education “units”, then Article 20 is not implemented to the extent it should.

Educational and Scientific Issues

The work by Lipka and colleagues with the Yup'ik communities in Alaska exploring Math in a Cultural Context (MCC) indicates that long-term collaborative relationships between institutions of higher education (e.g., Universities) and social Institutions consisting of Yup'ik elders, experienced Yup'ik teachers and other community members, is achievable and can result in interesting and culturally relevant mathematics. In the same vein, the extensive work reported by Duffy and colleagues (Alaska) on integrating indigenous perspectives into science courses and initiating a systemic shift in the orientation of science curricula prescribed by dominant educational Institutions, suggests that synergy between Western Institutions and Indigenous Social systems is possible, even in the domain of Knowledge. We live in an age where the Rationality of Science and the Validity of Mathematical Models can easily be questioned by natural phenomena and economic events that have long ignored the human element and decision making within dynamical systems. Traditional knowledge that typically was paid lip service by the community of scientists and relegated as folklore, are now being re-examined in areas such as ethnobotany, ecology, pharmacology and medicine. As Duffy et al posit in their article, “the local landscape should be central to science courses and involve issues relevant to stewardship, a component of the indigenous world view.” Building on this view of ecological stewardship, Barbaran's article presents a strategy of cultural preservation to the Athabaskan community of Central Alaska, which very much in a developmental stage but is meant to be feasible in other indigenous areas of the world in search of small modules of implementable/developmental educational activities. The work by Fyhn, Eira and Sriraman on Sámi units of measurement follows in the philosophical lines of inquiry Lipka's projects in Alaska, with the hope of reaching the systemic level of co operation and progress reported by Duffy.

Implications for the Future

Article 36 of the U.N resolution talks about making borders porous for the dignity and survival of indigenous people artificially separated by constructs of State and Nation. Unlike other “polarized” regions of the world (pun intended) where this right is routinely eroded, the circumpolar regions of the world serve as an example of the benefits of exchange and cooperation. Indeed an entirely new interdisciplinary area of study called Borderology has spawned in the Arctic. Borderology is a field of study developed by researchers in the Barents sea region of the Arctic, which includes policy makers, economists, cultural workers, political philosophers and scientists. The goal of this area of study is to understand the basic nature of conflict in areas of shared resources at the intersection of natural and/or artificially drawn borders, and find ways in which resources and responsibilities may be viewed symbiotically as opposed to conflicting.

The five papers of this issue of Interchange reveal different possibilities to communities of science and mathematics educators, educational policy makers, cultural workers and others, on the complexity inherent in studying and understanding indigenous issues. The circumpolar

regions of the world will become an area of geopolitical conflict given the consequences of climate change and the global powers competing for mineral and water resources. Educational Institutions looking futuristically have the potential to reduce conflict by creating communities connected with a common outlook. In this regard, indigenous knowledge and vested interests come to the foreground of any discussions for policy or initiatives that are implementable and sustainable.

References

- Coates, K.S. (2004). *A Global History of Indigenous Peoples: Struggle and Survival*. Palgrave, Macmillan, London.
- Smith, L.T. (1999). *Decolonizing Methodologies: Research and Indigenous Peoples*. University of Otago Press, Dunedin, New Zealand.
- Morison, S.E. (1971). *The European Discovery of America: The Northern Voyages (A.D. 500-1600)*. Oxford University Press.
- U.N. (2007). 61/295. *United Nations Declaration on the Rights of Indigenous Peoples*. Retrieved April 27, 2010 from <http://daccess-ods.un.org/TMP/2946728.html>