The Preservation and Maintenance of the Knowledge of Indigenous Peoples and Local Communities: The Role of Education

Abstract

Research by Langton and Ma Rhea (2003) found that education plays an important role in the preservation and maintenance of Indigenous peoples’ and local communities’ knowledge. This paper raises key issues regarding this role beginning with a discussion of the terms ‘Indigenous’ and ‘local community’. It then reports on the evidence for the existence of Indigenous and traditional knowledge and the reliability of documentation of traditional knowledge in education curricula. Finally, the paper considers the role of adult and western-based education in the protection of Indigenous and traditional knowledge within the globalised market economy.

Introduction

Research by Langton and Ma Rhea (2003) has found that education plays an important role in the preservation and maintenance of Indigenous peoples’ and local communities’ knowledge. Their report *Asia and the Middle East - Regional report on the status and trends concerning the knowledge, innovations and practices of indigenous and local communities relevant to the conservation and sustainable use of biological diversity* relates directly to Article 8j of the United Nations Convention for Biological Diversity and reviews the situation with regard to conservation and sustainable use of biodiversity in countries in the Middle East, Asia and Australia.

Article 8j states that

> Each Contracting Party shall, as far as possible, and as appropriate...

> “8(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of Indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of benefits arising from the utilization of such knowledge, innovations and practices.”

This paper raises issues surrounding the terms ‘Indigenous peoples’ and ‘local communities’. It then analyses the evidence for the existence of Indigenous and traditional knowledge and the issues relating to the documentation, ownership and inclusion of traditional knowledge in education curricula. Finally, the paper considers the role of adult and western-based education in the protection of Indigenous and traditional knowledge within the industrialised, global market economy.
Indigenous peoples’ and ‘Local communities’: definition of terms

The definition of the term ‘Indigenous Peoples’ is a contested matter. Clear definitions have become important because of the emergence of particular rights accorded to Indigenous peoples under international law due to their distinctive identities, their deep links with their ancestral lands, and their reliance on customary law and institutions (which in many cases are deeply interrelated with their surrounding natural environment), rights which precede the creation of nation states.

In many cases, international law is at odds with national law regarding the rights of Indigenous peoples. For example, the Convention on Biological Diversity affirms the rights of national signatories to assert sovereignty over its lands and waters, that is it works through the framework of national legal structures rather than through international legal avenues. While the Convention works to develop internationally agreed recognition and protection of the knowledge and biological property of each national signatory, thereby contributing to emerging international legal frameworks vis a vis the nation, it is also held responsible under Article 8j, to pay attention to the rights of Indigenous peoples. Many national signatories subsume Indigenous intellectual and resource rights under the mantle of national interest and do not find it in their national interest to protect and maintain Indigenous lifeways.

India and China do not use the term ‘Indigenous people’ in law or policy. All people of China are citizens, with the term ‘minority group’ being the most common way of describing non-Han Chinese where this distinction is necessary. India uses the term ‘tribal’ as preference. In contrast, the Philippines has already legally recognised the rights of Indigenous peoples in national legislation. Their Indigenous Peoples Rights Act of 1997 refers to Indigenous Cultural Communities and Indigenous People.

Mrs Erica Daes (1996), the Chairperson of the UN’s Working Group on Indigenous Populations, summing up the deliberations of 10 years of work concluded that:

The factors which modern international organisations and legal experts (including Indigenous legal experts and members of the academic family) have considered relevant to understanding the concept of ‘Indigenous’ include:

- priority in time with respect the occupation and use of a specific territory;
- the voluntary perpetuation of cultural distinctiveness, which may include aspects of language, social organisation, religion and spiritual values, modes of production, laws and institutions;
- self-identification, as well as recognition by other groups, or by State
authorities, as a distinct collectivity; and

- an experience of subjugation, exclusion or discrimination, whether or not these conditions persist.

It is this definition that has been used in the larger work and for this paper.

Local communities

The term ‘Local communities’ is used to mean many different things depending on the scope and politics of particular national development agendas or research. ‘Local communities’ can mean Indigenous communities and can include these people and, therefore, their legal rights. More commonly, it is used to refer to local groupings of people in distinction with regional, national and international/global groupings. It has been recognised that over time, groups of people mainly in rural areas adapt and develop ways of doing things that are called ‘traditional’ using their knowledge in agriculture, food harvesting and related purposes, and traditional medicine, as economic and subsistence activities. These people are commonly part of the same ethnic and/or cultural group that form the national majority but have developed adaptations of knowledge that are considered to be important to protect and preserve.

The Convention on Biological Diversity adopts a problematic phrasing ‘Indigenous peoples and local communities’ in its development of policy frameworks with regard to Article 8j. Under international law, local communities are not afforded rights and protections whereas Indigenous peoples are. For example, Indigenous people have a right to have their lifeways included as part of education and to be able to learn in their own language.

Under national laws, the rights of local communities are more commonly protected by majority laws and policies except in the case where Indigenous people are the ‘local community’ under discussion in which case there are few examples where their rights are recognised as distinct from the majority. For example, national curricula frameworks reflect the lifeways of the majority, even at the local school level, and teaching and leaning is most commonly conducted in the majority language.

This paper will use the term ‘traditional’ to designate those aspects of a nation state or a subset of its people who have developed adaptations of local knowledge that are considered to be important to protect and preserve and will use the term ‘Indigenous’ as it is used at international law.
Evidence for the existence of Indigenous and traditional knowledge

In discussions about the role of education, it is important to establish the existence of Indigenous and traditional knowledge as distinct from the majority knowledge that is taught in mainstream education systems. There are both direct and indirect indicators which infer the existence of traditional biodiversity related knowledge and practice. The direct indicator is that Indigenous peoples and local communities affirm its existence and that nation states recognise it. There is also indirect evidence related to such factors as language diversity, religious belief systems, traditional medical knowledge and practices, and the ways in which people exploit their environment to survive.

The issue of evidence of the existence of traditional biodiversity related knowledge is not merely a methodological one, but one that concerns the future retention of traditional environmental knowledge. As national education systems are extended to rural and remote populations, bringing increased opportunity for communities to enter the industrialised, global market economy, the role of education has been a double edged sword. There is extensive evidence that shows that national western based education systems, even when localised, contribute to the delegitimisation of traditional knowledge of the subsistence economy and a legitimisation of the knowledge that will enable people to enter the industrial economy, for example, learning English, learning reading and writing, mathematics and western science. It has also been the case that, in isolated examples, education has supported the documentation of traditional knowledge in a way that has been critical to the capacity of future generations to access that knowledge.

There are a variety of contributing factors to the very large gaps in knowledge of, and literature concerning, the role of education in the preservation and maintenance of the knowledge of Indigenous peoples and local communities. These can be summarised under the following general descriptors:

- Rare examples of nations proactively recognising the importance of the knowledge of Indigenous peoples and local communities within education;
- Underdevelopment and lack of resources to support education systems to preserve and maintain traditional systems of knowledge;
- Remoteness and inaccessibility of many small Indigenous and local populations mitigating against research and documentation undertakings, and reducing accessibility to information about local initiatives in education, if they exist; and
- Lack of consensus on the value and importance of the knowledge of Indigenous peoples and local communities within education systems for
both holders of such lifeways and knowledge, and for the broader society.

Education involves use of societal knowledge that contributes to curriculum content. It is clear in our research that the human knowledge of Indigenous peoples and local communities is failing to become embedded in national education systems because it is seen as lower order knowledge when compared to the superior knowledge system of western industrialised societies.

Documentation, ownership and inclusion issues regarding traditional knowledge in western-based education

*Documentation and Ownership Issues*

The documentation of traditional and Indigenous knowledges, as noted above, is one of the foundations of the capacity of traditional knowledge holders to promote, protect and facilitate the proper use of their knowledge. Accurate documentation also enables nations and other interested parties, such as national systems of education, to enter into agreements and contracts with traditional knowledge holders that will strengthen the capacity of these communities to develop economically sustainable livelihoods and see their knowledge included in national education systems.

The issue of sound documentation lies at the heart of the problem of preserving and maintaining the knowledge, innovations and practices of Indigenous peoples and local communities relevant to the capacity of a community to undertake conservation and sustainable use of biodiversity and to use education to hold and preserve their knowledge. A recurring theme of our research was that communities cannot build their capacity to mobilise their knowledge if there is no recognition that it is owned by them.

Posey observes that, ‘The nature of traditional knowledge is such that more of its transmitted orally than written down’. Intellectual property tools have been adopted by a number of countries to promote and protect traditional knowledge and folklore, including specific IPRs (Posey 1996:70; see also WIPO 2002; WHO 2000). Some countries have recognised that the existing intellectual property system is not, on its own, adequate to protect traditional knowledge. A number of these have enacted or are in the process of enacting *sui generis* systems of protection, including the Philippines and Bangladesh (Posey 1996:79).

The range of existing and potential protective measures for traditional knowledge and practice systems, then, depend on sound documentation in order to describe and catalogue the elements of local systems for the purposes of *sui generis* and other protective measures and
for their preservation and protection for the members of those societies in which they originate. Such protective measures, \textit{sui generis} and otherwise, include for instance, digital libraries and registers.

As noted above, the relevance of traditional knowledge and practice to the vast geographical areas of the regions discussed in this study and the importance of traditional knowledge to the natural resource management, agricultural and pastoral lifestyles, medicinal and other social and economic needs of most rural populations in these regions means that the task of documenting traditional knowledge and practices is unachievable in the short term. Even so, documentation is central to the capacity of Indigenous peoples and local communities to preserve and maintain their knowledge. Reliable documentation, with clear ownership entitlements will also strengthen the probability of the knowledge of Indigenous peoples and local communities being amenable for inclusion in national systems of education.

\textit{Inclusion Issues}

Western based education has developed during the Industrial Age and relies on the assurance that what is taught is researched and proven according to recognised standards. There is a large body of work that shows that national curricula reflect the worldview of the dominant group, and that knowledge about people and things is representative of empirical evidence drawn from a deep and long history of human endeavour, couched in contemporary social relations.

The western worldview assumes the superiority of the production of knowledge through the collection and analysis of data. There is recognition that in western based science and social science that there are systems in place that check empirical findings and to base knowledge on what can be proven. For example, even if teachers have not seen the experiment themselves, they can be sure that good science will have had its findings tested by appropriate methods, and that these findings have been accurately documented and accepted as being true.

The Western scientific approach has therefore developed a significant body of documented evidence which is brought into the education system. This is not the case for Indigenous knowledge systems where knowledge tends to be passed on orally. Instead, within Indigenous communities, knowledge is subject to its own tests of time and application. In bringing the knowledge of Indigenous peoples and local communities into education, their knowledge becomes data. Indigenous knowledge is increasingly being discussed within the context of Western knowledge systems and is being tested using western scientific and social scientific methods. This raises the important question of what theoretical and methodological
approaches should be adopted when attempting to incorporate the empirical knowledge of Indigenous peoples and local communities into western based education.

In cases where IK has been subjected to Western theories and research methodologies, a new kind of abstracted knowledge has been created. Like all other human knowledge, it is this representational, derivative form of knowledge, not the original IK itself, which is amenable to documentation and teaching in the classroom or on a field trip. It is important that students recognise it as being equal to other knowledge, and subject to the same type of critical analysis.

When looking for such derivative traditional knowledge to incorporate, for example, into a science or technology curriculum, teachers should encourage students to gain the skills needed to ascertain that the documented IK is indeed reliable. Such skills would include the ability to identify the following:

- that there has been informed consent on behalf of the Indigenous community, for example through a recognised community leader;
- that the IK documented is the result of informed participation by such a person;
- that documentation strengthens the capacity of Indigenous communities to participate in the conservation management of their own resources; and
- that non-Indigenous partners have entered into clear agreement with the Indigenous community about the ethical, theoretical and methodological issues regarding the dissemination and legitimation of the IK under examination.

In previous research, Ma Rhea (2002) identified protocols for the inclusion of traditional knowledge in education curricula in policy brief, ‘Raising awareness of Indigenous knowledge in science and technology education’ for the Indigenous Knowledge Dossier of SciDev.Net., observing that, ‘It is widely accepted that for society at large to fully understand the issue, science and technology teachers need to embrace environmental sustainability in their teaching approach.’

National education systems, at a global policy level, are seen as a critical building block in fostering positive attitudes about human rights, equitable resource management and development, and the preservation of the Earth's diversity. But, in the past, Western-based education has also been criticised for dismissing and attempting to supplant Indigenous knowledge. It is therefore worth asking why these systems now want to incorporate aspects of
Indigenous knowledge into their curricula.

Those involved in government and education are beginning to recognise the value of traditional knowledge in terms of gaining an insight into managing ecological sustainability and resource biodiversity. And in one sense, Indigenous peoples and local communities might welcome this interest as a chance to preserve their knowledge systems and securing acknowledgement of their rights under international legal protocols.

On the other hand, many are suspicious of business people, scientists, teachers and government officers — whether foreign or local — trying to elicit their traditional ecological knowledge, for example, while refusing to recognise their fundamental human rights.

The Role of Education for Capacity-Building

From the previous discussion, and from the findings in the research, it is clear that education has a key role to play in the preservation and maintenance of Indigenous and local community knowledge through building capability in the Indigenous and local communities for the protection and maintenance of these knowledges in both the subsistence and capital-based economies. This paper will first consider the role of adult education, and second development of collaborative learning partnerships that can inform western based national education systems.

Adult education

Adult education can play many roles. Since many Indigenous people have access to only their local community language that may not have a written form, and since many are also semi- or illiterate, adult basic education can play an important role in developing skills of reading and writing in that language or in a more mainstream language, resulting in greater possibility of documentation and preservation. Adult education can also promote awareness of the cultural significance of the knowledge that is traditional and hence ‘taken-for-granted’, so that local communities come to see that it is of interest to a broader constituency, including commercial interests that may seek to exploit it.

This in turn raises the issue of ownership of intellectual property and the preservation and recognition of human rights. Several examples are reported of participatory action research projects where local community leaders studied their own communities with a view to awareness raising, skill development and ultimately empowerment, thus contributing to the preservation and integration of local knowledge. Awareness of initiatives in other
communities may also help to raise optimism as to what community action may achieve in respect of sustainability.

Adult education is employed to support capacity building measures in Indigenous and local communities. Firstly, there are community-based adult education programs that undertake a variety of activities: for example, working with local communities to protect, promote and facilitate the use of their knowledge for conservation and/or economic purposes, and enabling the transfer new knowledge and skills to Indigenous and local peoples. Sometimes these education activities, also called community capacity building programs, draw on documented traditional knowledge, and sometimes the activity itself seeks to document, register and establish ownership of these knowledges.

The larger work has undertaken an extensive coverage of adult education and demonstrates that it is a key measure in capacity building in many nations as they seek to promote, protect and facilitate the use of traditional knowledge for conservation and economic benefit.

**Establishing Collaborative Learning Partnerships**

The issue of how traditional knowledge may be incorporated into mainstream education systems is complex. Many signatories to the Convention refer to their national system of education but go into little detail about the effect that such incorporation has on efforts to preserve and maintain the knowledge of Indigenous peoples and local communities.

The larger report discusses this issue in the context of globalisation of education. The report first points to the status that many governments in the regions surveyed attach high status to western scientific and technological knowledge because they perceive it to be important for capacity building in national education systems. At the same time there is a growing western interest in traditional knowledge because of its potential contribution both to global ecological sustainability and to minimising the west’s pre-occupation with materialism. The problem, however, is to design a curriculum that achieves an appropriate balance between these two knowledge traditions. The difficulties are intensified because western knowledge is given higher status than Indigenous knowledge, and because students often rote-learn for memorisation rather than aiming at understanding. In addition, the voice for traditional knowledge may be weak amongst some leaders of some developing countries because they themselves pursue an agenda that is detrimental to concepts of environmental sustainability and the rights of Indigenous peoples and of local communities.

This poses many problems, particularly in postcolonial countries where western based education systems are seen as having failed Indigenous peoples and local communities. Ma
Rhea and Teasdale (2000) discuss the hierarchical school system that has been denounced for promoting only a narrow, memorised form of learning. This situation places Indigenous learners in the position of being able to reproduce western knowledge, but lacking the skills to critically analyse or test such knowledge. Similar observations have been made about European aid, development and, colonisation, where western-based education systems have traditionally required Indigenous learners to know more about the geography, history and culture of the colonising people which tends to be regarded as ‘better’ that locally-focused knowledge and the knowledge arising from their traditional lifeways.

There is some evidence that a solution to the problem may be found in the strategy of collaborative learning partnerships between local communities and mainstream educationalists. The framework for such partnerships could comprise:

- Agreement in principle that Indigenous and non-Indigenous knowledge should feature in a national education curriculum
- Both Indigenous and non-Indigenous collaborators have a clear understanding of their rights and responsibilities regarding the inclusion of traditional knowledge in the curriculum;
- The intellectual value of Indigenous peoples' knowledge is credited: teachers should convey to their students that Indigenous knowledge is as important as Western science;
- The local knowledge that is included being soundly and accurately documented, and its status as knowledge being verified by knowledgeable Indigenous leaders and by western experts
- The traditional resource rights and intellectual property rights of the Indigenous collaborative partners are recognised, for example through a sui generis system (a custom-made national system of intellectual property) (Ma Rhea, 2002).

Indigenous and local community leaders and teachers would take equal responsibility in devising methodologies for curriculum development and pedagogy, and in shaping the partnership. It is possible, for example, that the teacher would undergo a period of learning within the local or Indigenous community before being entrusted with traditional knowledge that could be taken back to the classroom.

It is clear that the success of this approach relies on a formal agreement between the parties.
about their rights and responsibilities. This would ideally be guided by a global charter (such as the *Draft Declaration on the Rights of Indigenous People*) and implemented at a national level under *sui generis* protection. It could be envisaged, for example, as a Memorandum of Understanding between a government education department and an equivalent Indigenous body (for example, a Council of Elders education committee).

There are some excellent examples of what can be achieved in Indigenous/non-Indigenous collaborations once a collaborative learning partnership is in place. See, for example, UNESCO's [Teaching and Learning for a Sustainable Future](http://www.unesco.org) website, and Kawagley & Barnhardt's paper *Education Indigenous to Place: Western Science Meets Native Reality* (*ibid*; see also Ma Rhea and Rigney 2001 for a discussion of developing collaborative research partnerships).

**Bibliography and Resources**


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*Web based resources*


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Terra Lingua website at http://www.terralingua.org/


