

THE TELLING: TEACHING INFORMATION MANAGERS ABOUT MANAGEING INDIGENOUS (ECOLOGICAL) KNOWLEDGE

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For I come from the salt water people, we always live by the sea
— Neil Murray and Christine Anu

Abstract

Indigenous knowledge (IK) and Indigenous ecological knowledge (IEK) are subject areas that contribute to anthropology and multidisciplinary fields such as environmentalism. Here we identify key issues and barriers to teaching about IK/IEK in the context of developing a course for postgraduate information managers and pilots in two courses on *Knowledge Management in Organizations*.

Introduction

Study of Indigenous ecological knowledge (IK) and Indigenous ecological knowledge (IEK) of customs, flora, fauna and practice is increasingly recognized in anthropology as a sub-discipline (Brokensha et al., 1980) and also contributes to other subject areas, such as environmentalism and ethnopharmacology (Colorado & Collins, 1987; Ford, 2001). Unethical and illegal biopiracy, which has included harvesting and exploiting Indigenous peoples' genetic material without permission (Brush, 1996; Deloria, 1995; Haraway, 1996), has led to heightened Indigenous sensitivities and revised legal remedies for misconduct. So educators who are interested in studying and teaching IK/IEK must comply with ethical and legal frameworks governing how to acquire, store and disseminate such knowledges. Moreover these activities need to be compliant with nested Indigenous, National and International jurisprudences. Another complicating factor is brought by use of information and communication technologies (ICT) for technology enhanced learning (TEL). This paper investigates how IK can be ethically gathered and then

shared with students, using technology to provide a virtual indigenous voice. Our work is in the context of developing a course on Preserving Indigenous Knowledge for the Business and Information Management (BIM) and the Library and Information Management (L&IM) postgraduate programs at the University of South Australia (UniSA). It reports upon lessons learned from two pilot experiences of including IK/IEK in courses in Knowledge Management in Organizations.

Indigenous Knowledge

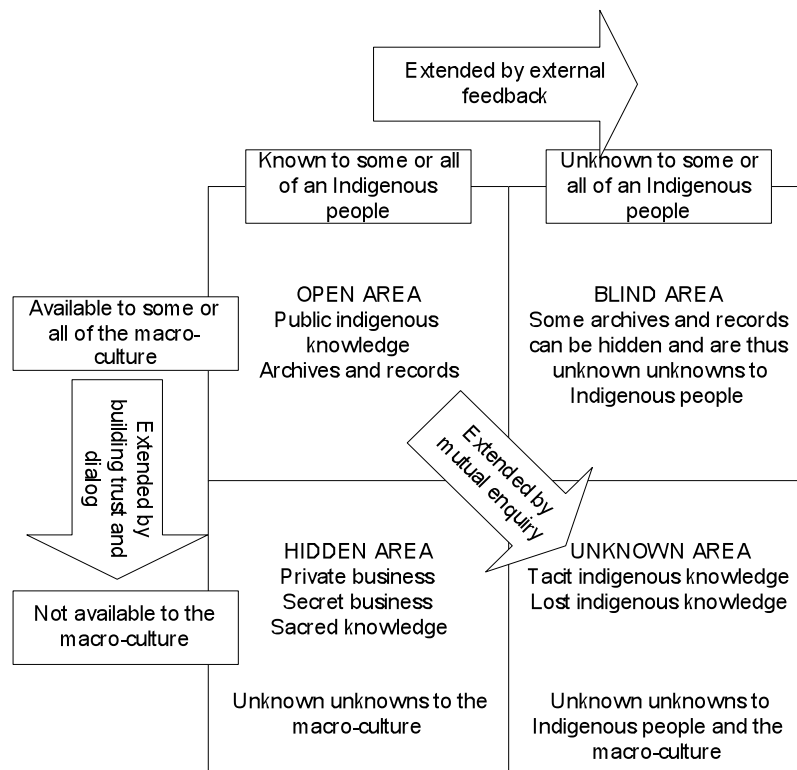
Indigenous knowledge belongs to communities, such as the Australasian Aboriginals, the European Basques, and the North American Inuit, who are linked to geographical places — known in Australia as *Ngurrumbang or Country*, in Canada as *Nunavut* and in France as *Terroir*— and it is passed to succeeding generations via *predominantly* oral processes (Cox, 1987; Knudtson & Suzuki, 1992; Oguamanam, 2008; Stevenson, 1996; Warren et al., 1993). It is important to understand that Indigenous communities and IK exist in both *independent* and *interdependent* micro- and sub-cultures within and/or in opposition to the global macro-culture (Francis, 1992). As Stevenson comments “Indigenous knowledge can be viewed as having two sources: traditional knowledge and nontraditional knowledge . . . (1) aboriginal people also possess knowledge and experiences not grounded in traditional lifestyles, spirituality, philosophy, social relations, and cultural values; and (2) Indigenous knowledge is the articulation, and frequently the dialectic, of traditional and nontraditional knowledge” (Stevenson, 1996, p. 280). One example of *independent* IK is Australian Aboriginal music, which plays many authentic roles in Aboriginal society (Ellis, 1985). However, the same music as recorded commercially or by ethnomusicologists is regularly sold to tourists as a keepsake. A closely related example of *interdependent* IK is Australian Aboriginal country music, in which “aboriginal people adopted country music to tell their stories in a way that could be understood by non-Aboriginal Australians” (Breen, 1989; Kirkbright, 2000, p. 65; Walker 2000).

Indigenous Ecological Knowledge

One form of IK which Indigenous sub-cultures own that is perceived as being valuable to members of macro-cultures is IEK (Berkes, 1993; Berkes, 1999; Gadgil & Berkes, 1991; Hardesty, 1977; Johannes, 1989; Johnson, 1990; Martinez, 1994; Stevenson, 1996). Indigenous ecological knowledge “is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Further, traditional ecological knowledge is an attribute of societies with historical continuity in resource use

practices; by and large, these are non-industrial or less technologically advanced societies, many of them Indigenous or tribal” (Berkes, 1993, p. 3). For example, Australian Indigenous people own what environmentalists term *the desert knowledge*. This knowledge distils field-tested approaches to long-term survival in Australia’s arid inland environment. In theory, IEK can facilitate sustainable environmental management and survival (Kendrick & Manseau, 2008). However, enthusiasm for such knowledge from members of the macro-culture and an assumption that Indigenous people own IEK that can solve pressing environmental problems (Berkes et al., 2000), such as Australia’s water shortage, needs to be tempered with the observation that the macro-culture tend to see Indigenous peoples in ways that meet its current needs (Francis, 1992). So stakeholders in the macro-culture require education in differences between the popular conceptions and realities of IK/IEK. Even so, given the current Australian political and scientific awareness of climate change (Flannery, 2008; Senge et. al., 2008) IEK is a burning issue within Australian academia.

Figure 1: An Extended Johari Window



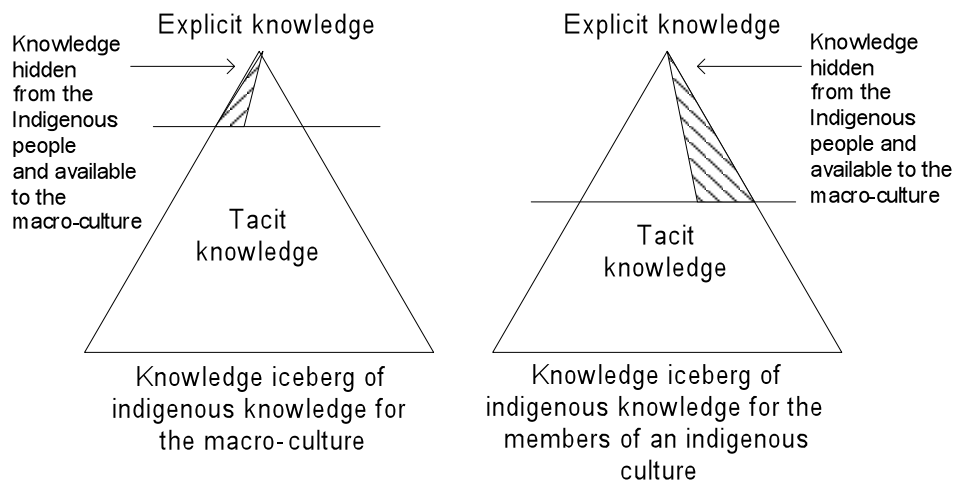
(after Luft and Ingham, 1955)

Indigenous Knowledge and Knowledge Acquisition

By extending the framework of the Johari window, which is usually applied in work on individual self-concept and leadership (Luft & Ingham, 1955), we can see that IK/IEK can be either 'known' or 'unknown' to an Indigenous individual or community or to members of the macro-culture (see Figure 1). Some IK/IEK that is a 'known known' to an Indigenous community will overlap with the 'unknown unknowns' of the macro-culture. Knowledge that is known to Indigenous individuals and communities and to members of the macro-culture equates to the visible tip of Seely Brown's knowledge iceberg while the remaining knowledge equates to the sub-aquatic or tacit portion of the knowledge iceberg (2002). The level on the iceberg where explicit knowledge is visible is likely to vary for members of the macro-culture and the Indigenous people (see Figure 2). In some cases members of Indigenous communities may deliberately hide IK/IEK from members of the macro-culture (for a fictionalized account, see LeGuin, 2000). One reason for such subterfuge is that as IK/IEK has increasingly been commoditized by western techno-science (Haraway, 1996; Posey, 2002; Roht-Arriaza, 1996).

Conversely some knowledge about the history of an indigenous people may be unavailable to them yet available to members of the macro-culture (see Figure 2). Although Indigenous people's rights to share profits from IK/IEK are now protected by the United Nations' Convention on Biological Diversity (Oguamanam, 2006) in many cases bioprospecting has been performed surreptitiously, unethically or even illegally (Craig & Davis, 2005; Mgbeoji 2005). These issues make it hard to extend the open area of this Johari window into the private area via knowledge acquisition and to extend into the unknown area through mutual enquiry.

Figure 2: Knowledge icebergs representing the amount of explicit knowledge about an Indigenous people's knowledge that is available to the macro culture and the indigenous people. Note that some explicit knowledge about the history of the Indigenous may be unavailable to or hidden from members of the Indigenous people (after Seely Brown, 2002)



Unfortunately, there are many reasons why collecting, sharing and storing IK and IEK are not straightforward. Collecting IK is complicated by issues such as whether an Indigenous person has the right within their community to share their knowledge. Information technologies can exacerbate issues and sensitivities associated with preserving IK and IEK (see Christie, 2004). For example, storing knowledge in the form of visual audio-media of an Indigenous Australian can be insensitive if that media is stored or streamed subsequent to his or her death. Storing linguistic data or metadata is also difficult: a homonym in two neighboring Indigenous languages can refer to different flora or fauna; conversely, a type of flora or fauna can be referred to by different words in neighboring languages. So contextual knowledge of country and Indigenous linguistic history can be very important in eliciting accurate IEK. Given the loss of Indigenous knowledge holders to migration and premature death, this requirement means that it may be hard to train sufficient well educated and sensitive knowledge engineers while IEK still exists within Indigenous peoples.

Teaching Indigenous Knowledge

The University of South Australia (UniSA) is situated in country whose traditional owners are the *Kaurna* People of the Adelaide Plains. It has acknowledged “a special responsibility to provide leadership in Indigenous research and education

by virtue of its founding Act.” and “the Indigenous Content in Undergraduate Programs Policy (ICUP), an Australian University first . . . requires all UniSA undergraduate programs to include an assessable and compulsory component of Indigenous content by the year 2010” (UniSA, n.d.). So UniSA is a supportive environment at which to develop learning experiences about IK/IEK and Indigenous peoples. Here we describe some first steps towards establishing a significant presence for IK/IEK-oriented curriculum at the postgraduate level in courses in information management (IM).

The BIM and L&IM programs integrate four streams of IM viz. archival management, enterprise content and knowledge management, library management, and records management. In the Australian and UniSA contexts, IK/IEK is relevant to each of these streams. So the program now aspires to develop a course in eliciting, managing and preserving IK/IEK that can be taught across them and in external and internal modes. The tenets of developing the course include the following. A multi-cultural course development team must include indigenous people and involve stakeholders from relevant institutions such as libraries, museums and state records. Those involved need to learn about teaching IK/IEK in a way that is compliant with ethical standards and Indigenous, Australian, and international laws. During the learning design, Indigenous practices, such as story circles (Nabhan, 1997), need to be regarded as being equivalent in status with Western approaches and technologies. As Korma argues, “we are reminded of the global and historical tendency of complex technologies associated with economic powers to squash smaller, local technologies . . . We are urged to identify the valuable elements of smaller technologies and to create a place for them in the new century” (Kroma, 1996). So we are currently taking small steps towards developing the internal competence to establish working relationships with Indigenous people and especially teachers. As part of this process we feel that we need to demonstrate that Indigenous knowledge can be taught at the postgraduate level in UniSA in an ethical way.

In 2008, Shurville piloted a lecture on IK/IEK Management in the undergraduate course *Knowledge Management in Organizations*. The lecture contained information on the nature of IK/IEK and the problems associated with bioprospecting and biopiracy. It also discussed ethical approaches to elicitation, storing and disseminating IK/IEK. The lecture was well-received by the students. Indeed the learning conversations on the discussion boards were both deeper and more abundant than for other topics. One unexpected outcome of teaching about IK/IEK within a course on knowledge management was that discussion of the cognitive relationship between Indigenous peoples and their country helped students to understand the concepts of distributed cognition (Hutchins, 1995), the extended mind (Clark & Chalmers, 2003) and situated cognition (Hendriks-Jansen, 1996). These are fundamental to understanding how knowledge management

systems composed of people and artifacts can help people to make smarter decisions. Following the lecture on IK/IEK, students started to spontaneously comment that Indigenous peoples are in cognitive relationships with their country, which provides explicit and tacit knowledge that helps them to make decisions and to survive. This experience demonstrated that IK/IEK could capture the imaginations of computing and management students. However, it was clear from face-to-face and virtual discussions that additional contextual background was required in order for the students to grasp the differences and similarities between IK/IEK and knowledge within the macro-culture. Moreover, reflection-on-action revealed that the student experience lacked an authentic Indigenous voice and an experiential learning component. So the undergraduate course indicated that, while that there were opportunities to teach appreciation of IK/IEK and to do so in ways that are in keeping with the learning and teaching philosophies of the University, further development of the learning design was necessary.

In 2009 Shurville redesigned the postgraduate course in *Knowledge Management in Organizations*. The curriculum was updated to include new topics such as *globalization and knowledge* and *Indigenous knowledge*. The assessment was redesigned to include experiential learning about the processes of knowledge management using authentic techniques for transforming tacit knowledge into explicit knowledge, such as action learning and anecdote circles.

Figure 3: Two versions of My Island Home by the Warumpi Band (left) (<http://www.youtube.com/watch?v=VaQLw1CvPMk>) and Christine Anu at the 2000 Olympics (right) (<http://www.youtube.com/watch?v=D6b62JugmT8>) (screenshots from You Tube)



The learning design for the lecture on IK/IEK now applies ICT to bring Indigenous voices to the lecture in three ways. The lecture opens with three audio visual samples of performances of the song *My Island Home* written by Neil Murray (Murray, n.d.). The first shows the song as originally performed by the Warumpi Band, which was a politically active rock band with Ingenious and

White Australian members (Warumpi Band, 1987) (see Figure 3). The song celebrates Elcho Island in the Arnhem country and laments the life of Indigenous people in the city. The second shows Torres Strait Islander Christine Anu, who is a former member of Neil Murray's later band The Rainmakers, singing her version (Anu, 1995) in the Australian country-rock genre. This version is altered to celebrate her own people's country. The third shows Christine Anu singing *My Island Home* at the 2000 Olympics in a fully Westernized production, featuring a Euro-disco beat and professional dancers representing Indigenous Australians (see Figure 3). The song is the same, yet the amount of Westernization varies considerably. Inclusion of the song is designed to facilitate later discussion of the creation of hybrid IK/IEK. A scene from the popular Australian comedy film *The Castle* (Stitch, 1997) is later used to establish the link between the constitutional right of Immigrant Australians to a house/home and the constitutional right of Aboriginal Australians to country/home. This scene is included to facilitate discussion of local and international law and IK/IEK. The lecture concludes with an audio-graphic presentation by an Aboriginal academic on an Indigenous experience of the deployment of ICT for Aboriginals in country.

An assessment for the course focuses on anecdote circles (Callahan et al., 2006). Anecdote circles are a popular knowledge management technique in Australia which are inspired by Indigenous story circles. An anecdote circle is designed to elicit snippets of narrative which illustrate the underlying values at play in an organization. They can be used for change management purposes by identifying how things are felt to be and how people might like them to be. In the learning design the students conduct an anecdote circle with up to four stakeholders in an organization to tease out anecdotes and narratives about how knowledge is managed or mismanaged within the organization. The students then construct a report to the management of that organization as a collaborative exercise using a variety of modes of communication and technology.

Reflection-on-action suggests that presenting such multimedia materials brought a selection of Indigenous voices to the lecture theater which constituted a small step forward. However, Shurville looks forward to an opportunity to redevelop the learning design alongside Indigenous academics and stakeholders.

Walking in Two Sunsets

We have touched upon some of the issues that should guide development of the proposed course on IM and IK/IEK. Rospigliosi is now enrolled at UniSA as an external student in a professional doctorate in ethical knowledge acquisition of IK/IEK. His thesis project aims to improve practice in the development and delivery of courses in IK/IEK and ethical and technical acquisition of IK/IEK.

Shurville is currently collaborating with Heather Brown of the State Library of South Australia and Simon Froude of State Records South Australia to develop a bid for external funding to design a course whose production and delivery will involve a range of Indigenous people and relevant agencies. So among our next steps is to develop a proposal and learning design that will involve Indigenous teachers and students and blend educational theory and technology with approaches derived from oral cultures. There is also the intention to discern ways that ICT might support the elicitation and sharing of IK/IEK. There is another underlying motivation, which we should make explicit. We believe that a course on IK/IEK in the context of a program on IM might help to tempt Indigenous Australians into training for a variety of IM professions where they are currently under represented (Dyson & Robertson, 2006). This is a slow process; walking in two worlds must be undertaken with care and respect (see Levy, 1992).

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