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The Australian Rangeland Society

Building on the knowledge of the Aboriginal land managers of tomorrow

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Abstract

Research has shown and Indigenous ranger groups and others have demonstrated that the combined use of Western science and Indigenous ecological knowledge increases engagement of Aboriginal people in contemporary land management.

Over the last 16 years, Tangentyere's Land & Learning project has become a well-established program for central Australian remote Indigenous community schools to teach this two-way science. The program engages students in science, and two-way literacy, by linking teaching to the local country, building on students' knowledge and interest in the bush.

Land & Learning, which has worked with 27 Indigenous community schools, supports transition to work in Indigenous rangers groups by providing students with relevant knowledge and skills and involving them in on-ground activities with local rangers.

The program involves local Indigenous communities in their schools. Research shows such involvement to be a major influence on educational outcomes for Aboriginal children. Land & Learning works with Indigenous Assistant Teachers and elders to develop and carry out Indigenous Language and Culture programs, linked to Western science.

Unique resources Land & Learning has produced include an extensive activities booklet; two-way Big Books on relevant land management issues; and local plant and animal photo-cards. These resources are also used by Indigenous ranger groups and others.

For a number of years, Land & Learning has survived on short-term funding, for periods of six months or less, and its continuation is uncertain. CSIRO Education, with the support of bankmecu and others, has mostly funded the program in the last four years.

Introduction

New education initiatives for remote Indigenous communities often focus on what outsiders think is a good idea rather than what communities, especially students themselves, are interested in, or the skills the students currently have. Tangentyere Council's Land & Learning program builds on students' knowledge, from their families, about the local bush, and links this to Western science.

Land & Learning engages students, and communities, in schools by promoting obvious connections between Indigenous Ecological Knowledge (IEK) and the school science curriculum. English and local language literacy activities are part of this process.

Educating the land managers of tomorrow

Two-way education about the bush is important because both IEK and Western science are increasingly being used to manage Aboriginal land, through Indigenous ranger, Indigenous Protected Area and other programs, which provide employment for some young people in communities.

Aboriginal people are major landowners in central Australia, and the Northern Territory as a whole, and current students have future legal and custodial responsibility for looking after a significant part of this region.

Some background on two-way science education in the Territory

Researchers have commented on the 'strategic fit' between education and two-way management of country:

'The combined use of Western science and Indigenous knowledge that underpins ILSM (Indigenous Land & Sea Management) allows for the engagement of Aboriginal people in the learning process, while simultaneously drawing upon high level scientific concepts – especially in the areas of biology and the environmental sciences.' (Fogarty & Schwab 2012)

These researchers reported a growth of school 'learning through country' programs associated with the rise of Indigenous ranger programs in the Northern Territory (Fogarty & Schwab op cit). From this author's observations, this is not yet happening in the Centre, where Indigenous ranger groups only gained momentum a decade or so ago.

Links between schools and Indigenous ranger programs in the Centre currently consist mainly of occasional activities not linked to the curriculum. The additional workload needed for rangers and schools to connect up regularly is significant, even with enthusiasm on both sides.

Indigenous language & culture programs in schools

The main learning about the local country in central Australian remote community schools presently happens through Indigenous Language & Culture (ILC) programs in schools, and formerly occurred through bilingual programs in some schools. ILC is an elective in schools, so is only taught when non-Indigenous staff have enough interest and commitment.

Even then, these staff do not have much time to support the Aboriginal Assistant teachers (ATs), who run ILC programs, to liaise with elders, prepare for and carry out country visits and classroom lessons and develop resources. The NT Department of Education has one or two ILC resource officers in the Centre, who can provide some planning and resource support.

ILC programs are one of the main ways for communities to be involved in remote schools, which research has widely demonstrated to be a major influence on educational outcomes for Aboriginal children. (Douglas, 2011).

Classroom teachers usually do not have enough knowledge of local ecology to link ILC activities with the science curriculum, which is mostly taught with little or no local focus.

Tangentyere's Land & Learning project

Tangentyere Council was set up in 1979 to provide housing, social welfare and advocacy services for people living on Aboriginal town leases ('town camps') in Alice Springs. Tangentyere Nursery grew native plants for town camps and remote Indigenous communities and evolved into Tangentyere Landcare, which also did tree-planting and education projects. Tangentyere Landcare set up the Land & Learning project in the late 1990s.

Originally, Land & Learning was designed to work with post-school age young people in remote communities. However, it soon became apparent that the program could work much more effectively through schools, where there were support and resources for working with children.

Remarkably, given its piecemeal funding, initially from the Natural Heritage Trust, Land & Learning has continued until the present. It has sometimes had two scientist project officers but has been carried by only one person for the last four years.

The program has worked with 27 central Australian Indigenous community schools, mostly in remote communities. The Tangentyere scientist provides on-ground support for planning with all school staff, and for bush activities, usually with elders, and classroom follow-up. With Land & Learning, schools have both the local ecological knowledge and the critical mass of support they need to undertake these activities.

Some strategies the Land & Learning program has found to be important are:

- Work only with schools where there is interest and commitment from the principal.
- Support Indigenous Assistant Teachers (ATs) to direct Land & Learning themes and activities, as part of Indigenous Language & Culture (ILC) programs. Land & Learning supports ATs to teach IEK, including Indigenous language which most students understand much better than English, and to involve elders and others in communities. (There are very few fully-trained Aboriginal teachers in the Centre.) The program works closely with NT Department of Education ILC support staff.
- Use as a focus bush activities, varying from an hour or two to overnight camps. Students are often given worksheets, appropriate to their literacy levels, to complete out bush. English and local language literacy are developed as part of this field work and follow-up classroom activities.
- Involve scientists from other agencies and Indigenous rangers wherever possible. This is important both for the additional cultural and scientific input it provides and for the extra support for activities in remote country.
- Each project officer works with 3 or 4 schools for at least a year at a time, so there is a chance for projects and relationships to develop with both Indigenous and non-Indigenous staff, students and communities. In recent years, each project officer has worked with schools from the same Indigenous language group, taking advantage of existing links between these schools and communities.

Unique resources produced by Land & Learning include an 130-page booklet with information on central Australian ecology, two-way science activities and worksheets; a series of local plant and animal photo-cards in various Indigenous languages; and booklets on local land management issues, such as fire, threatened species, feral animals and monitoring wetlands. These resources put the ecology and status of local plants and animals on the agenda in community schools.

Conclusion

In central Australia, remote Indigenous community school students usually have good knowledge of and interest in the local bush. It makes sense for schools to build on this knowledge and link it to Western ecology, both to engage students and communities and to develop students' skills for managing their country. These skills are also very applicable for employment pathways to Indigenous Ranger groups and similar programs.

Over the last 16 years, Tangentyere's Land & Learning project has developed and extensively put into practice a program to support central Australian Indigenous community schools to teach two-way science, focussed on the bush and linked to Indigenous Language & Culture programs.

The future funding of Land & Learning is uncertain. In the last few years, the program has been largely funded by CSIRO education, and has been used as a model for part of a national CSIRO/BHP Indigenous science education program launched in late 2014.

References

Douglas, Josie. (2011). Learning from country: the value of country visits in remote schools for community engagement and natural and cultural resource management. Desert Knowledge CRC, Report 69.

Fogarty, W. and Schwab, R.G. (2012). Indigenous education: experiential learning and learning through country. Working Paper 80/2012, Centre for Aboriginal Economic Policy Research, ANU.