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Participatory action and dual lens research

Abstract

This conceptual paper explores the idea that, in the last few decades, collaborative inquiry methods have evolved along a similar trajectory to dual lens research. Dual lens research, known in various contexts as Both Ways, Two–Eyed Seeing, Old Ways New Ways and Koodjal Jinnung (looking both ways) is designed to generate new knowledge by exploring a theme through Aboriginal and contemporary Western lenses. Participatory action research and a dual lens approach are considered in a number of projects with particular focus on the issues such work can raise including conceptual challenges posed by fundamental differences between knowledge sets.

The authors hypothesise that a dual lens approach will become a branch of participatory action research, as such, a robust description needs to be developed and its ethical implications considered. Existing work in this direction, including principles and processes, are collated and discussed.

Dual lens research as a branch of participatory action research is of great significance in countries with Aboriginal populations that are undergoing a cultural renaissance. As dual lens practitioners the authors are finding their research outputs have a high positive impact on both Aboriginal and non-Aboriginal populations and make a genuine contribution to reconciliation by finding ways of going forward together.

This paper joins a body of growing body of research that supports resonances between Aboriginal and 'Western' research methods.

Keywords

Participatory action research, dual lens approach, Aboriginal, ethics, reconciliation

Author biographies

Dr Francesca Robertson is a Senior Research Fellow at Kurongkurl Katitjin, Edith Cowan University and a Senior Lecturer at The University of Western Australia. She developed koodjal jinnung with Nyoongar Elder Dr Noel Nannup and is currently

managing a number of dual lens research projects. Dr Robertson has previously worked with marginalised families, helping them to develop coherent narratives celebrating survival.

Jason Barrow is a Nyoongar man from the South West of WA and was born at the same place as his Grandfather, Gnowangerup – place of the mallee fowl. Based at Edith Cowan University's Kurongkurl Katitjin (pronounced as *koor-ong-kurl cut-it-chin* is a Nyoongar phrase which means Coming Together to Learn). Here he holds two positions: firstly as the Aboriginal Tuition Mentoring Program Coordinator and secondly as a Cultural Awareness Officer delivering and sharing his Nyoongar knowledge and ways of working to everyone.

Dr Magdalena Wajrak is a chemistry lecturer in the School of Science at Edith Cowan University. One of Magda's research areas is chemical education. She has a Diploma of Education and has a great passion for teaching and especially creating outreach activities that link traditional Aboriginal science with contemporary sciences, in particular chemistry. She is one of the team members of the Old Ways New Ways outreach program, established in 2014, which has received national and local recognition (finalist in the Premier's Science Awards and ATEM Tribal Award for Excellence in Community Engagement).

Dr Noel Nannup is a Nyoongar Elder and is Elder in Residence at Edith Cowan University. He is an expert in local biota in his own right and is a keeper of profound traditional knowledge.

Caroline Bishop is a community partnerships advisor in the engagement team. She has worked in the field of community capacity building for many years both in the UK and throughout Western Australia. As part of the Old Ways, New Ways team Caroline initiates and maintains partnerships for the program.

Alison Nannup is a young Nyoongar woman who has been a research assistant on several koodjal jinning projects. She is currently undertaking a degree in linguistics at James Cook University.

Introduction

In recent decades collaborative inquiry methods have evolved, often to meet the exigencies of the contexts in which they are used. A dual lens approach to learning, and research has also evolved in recent decades. Dual lens research is designed to generate new knowledge by exploring a theme through Aboriginal and contemporary Western lenses. It can be said that in their current states a particular collaborative inquiry method, participatory action research, and a dual lens approach are now within the same evolutionary trajectory. It is possible that a dual lens approach will become a branch of participatory action research.

In this paper the authors, who are dual lens practitioners, explore the emergence of the dual lens approach alongside the emergence of participatory action research. They describe a number of completed and current projects and explore some issues that arise from working with diverse knowledge sets. The authors consider efforts that have been made to develop a description and to manage ethical considerations. The paper concludes with robust description of the dual lens approach.

Evolution of collaborative inquiry methods

Collaborative or co-operative inquiry is a qualitative research method that is, as a foundational principle, conducted in collaboration with, rather than on, people (Eisner, 1991; Heron, 1996). It is usually conducted in the field, by researchers who engage with their subject(s) and their context(s). A level of interpretation is considered necessary in giving account of what was found during the research process. The researcher presence therefore needed to be made explicit in the findings (Geertz, 1973). The purpose of all research is to understand and make sense of the world; in collaborative research the purpose is also to create new ways of looking at things (Heron, 1996).

Collaborative inquiry is often used to develop shared ontology and epistemology in social services (Heron, 1996). Typically when collaborative inquiry is used in these contexts, it is with a praxis intervention method, action research, which follows a four-step process of planning, action, observing and reflecting (McNiff, 2013). Action research was first described by Lewin (1958) to describe research on the conditions and effects of various forms of social action and research leading to social action.

This was later referred to as cooperative research by *Reason and Rowan (1981)* as research between four different types of knowledge:

- Propositional knowing (as in contemporary science);
- Practical knowing (the knowledge that comes with doing);
- Experiential knowing (the feedback in real time about interaction within our world); and
- Presentational knowing (crafting and articulation new practices).

This is a cycling and recycling process, deepening experience and knowledge of the initial proposition, or of new propositions created by the process. The inclusive, reflexive and emancipatory nature of collaborative, cooperative and action research methodologies make them suited to community, organisational capacity building and professional development.

Participatory action research takes collaborative inquiry a step further, making it a political process. This step was influenced by a number of sources including the work of Paulo Friere (1982) and Orlando Fals (1996). Participatory action research is based on three interwoven elements; participation (in life, society and democracy), action (as an engagement with experience and history) and research (soundness in thought and the growth of knowledge) (Chevalier, & Buckles, 2008).

In participatory action research the participants are co-researchers seeking to make sense of the world through collective efforts to transform it, as opposed to simply observing and studying human behaviour and people's views about reality.

Participatory action research is used in educational, clinical and other service delivery settings as a way of making existing practices more appropriate for the people concerned, in their particular context.

Participatory action research therefore is; *a means of producing knowledge and of improving practice through its collaborative nature: the direct involvement of participant in setting the schedule, data collection and analysis and use of findings* (Hawkins, 2007 pp.3). Participatory action research is more fluid than the four step process, being a spiralling and re-spiralling process through observation, reflection, collaboration and theory building (Kemmis & Mactaggart, 2005; Mac Naughton, 2001).

Evolution of the dual lens approach

In the dual lens approach a theme is explored simultaneously through traditional Aboriginal and contemporary social and natural science perspectives. This approach was first developed by an Australian Aboriginal man Pincher Nyurmiyarri in 1976, Called Two Ways it was a way of; *developing the primary and secondary educational setting to re-establish learning/teaching relationships between old and young and healing rifts in the transmission of traditional knowledge through the interference of schools* (Ober and Bat 2007 p70). For Nyurmiyarri this concept of two-way schooling; *involved reciprocity and obligation involving curriculum, knowledge politics and power* (Ober and Bat 2007 p70). Staff at Bachelor Institute (a dual sector tertiary education provider that services the education, training and research needs of Aboriginal and Torres Strait Islander peoples) developed the concept and defined it as; *a philosophy of education that brings together Indigenous Australian traditions of knowledge and Western academic disciplinary positions and cultural context, and embraces values of respect, tolerance and diversity* (Bachelor Institute 2007, p4). This approach was; *innovative and constructivist in nature with the teacher education curriculum being built around principles of negotiation and action research* (Ober and Bat 2007 pp. 73). In 2008 Ober and Bat developed a set of principles to use in the development of a Both Ways Project. Whilst it was recognised that a Two Way curriculum would assist Aboriginal students into a mainstream educational systems, its capacity to support non-Aboriginal students was not explored in the literature.

At the same time similar work was being developed in other settings. In Canada, Two Eyed Seeing was used as a process for weaving Indigenous and mainstream knowledges within science educational curricula for an Integrative Science undergraduate Program at Breton University (Bartlett, Marshall and Marshall, 2012). The degree was only targeted to Indigenous students and did not last beyond the first few years. Those developing the course published on the lessons they learned during the process (Bartlett, Marshall and Marshall, 2012). The Integrative Science course was an extension of a number of Canadian based attempts to align Indigenous and mainstream knowledges. These were based on defined rational; that the imposition of an exclusively Western science curriculum was understood to reinforce the systemic barrier to success of Aboriginal students in the current educational system. A Two-Eyed Seeing approach therefore would allow Aboriginal peoples to participate fully in academic science and share their deep understandings about sustainable living (Hatcher 2012). It was also understood that it would be a

positive experience for non-indigenous students particularly those who had embraced sustainability particularly within the earth sciences.

In Western Australia the desire to improve the participation of Aboriginal and/or Torres Strait Islander students in science subjects, and thereby increase employment in science and technology led to the development of the Old Ways, New Ways (OWNW) program at Edith Cowan University. The program delivers hands-on science activities incorporating traditional Aboriginal tool making and ancient techniques for bush survival and sustainability linked to practical experiments in forensic chemistry, such as fingerprinting and chemical analysis of samples. The workshops are adapted to the differing requirements of students' age, cognition and literacy levels. The implementation of OOWNW has been widespread with over 2000 primary and high school students and over 100 teachers across the state, having taken part. The program is designed to reach Aboriginal and non-Aboriginal students and their teachers.

Between 2013-2015 koodjal jinnung (looking both ways) was developed at Kurongkurl Katitjin at Edith Cowan University. Koodjal jinnung is defined as a participatory action approach that explores themes looking simultaneously through traditional Nyoongar and modern contemporary Western lenses, searching for resonances that can support both communities going forward together.. The first research theme was boodja (land) and an eleven era conjoint history of Nyoongar boodja was produced. (The Nyoongar people are the Traditional custodians of the south west corner of Western Australia. The oldest traces of occupation are 48,000 years ago (Turney et al. 2003)

Primary outputs of this collaboration include an academic paper *Ngalak Koora Koora Djinang* (Looking back together), (Robertson, Stasiuk, Nannup & Hopper, 2016) a documentary film *Synergies; Djena Koorliny Danjoo Boodja-rang* (Walking Together, belonging to country), (Stasiuk, Robertson, Nannup, Hopper & Woods, 2015), and a supporting plain English book, *Nyoongar Boodja Koomba Bardip Karatan* (Nyoongar Land Long Story Short), (Robertson, Stasiuk, Nannup & Hopper, 2016). Current research includes an exploration of moort, the traditional Nyoongar family system, the British family in 1826 and how they have converged over time. Two other projects restore Aboriginal narratives to place; The Western Australia Aboriginal Journey Ways Project collects Aboriginal stories and maps associated with the main roads network. Similarly the Wyalkatchem, a Nyoongar History Project restores Aboriginal presence to an area of the Wheatbelt, in Western Australia.

In Koodjal Jinnung and Old Ways New Ways co-operative enquiry and participation action research techniques are used to establish the principle of collaboration and a process of persistent reflexivity between the knowledge sets.

A dual lens approach has also been used in other contexts: Two-Eyed Seeing was used to research the inclusion of Canadian Aboriginal healing practices into an alcohol and other drugs treatment service. It was framed predominantly as a decolonising effect in which ancestral traditions can be recovered and a healing journey take place (Marsh, Cote-Meek, Toulouse, Najavits, & Young, 2015). Both Ways was used by Australian Aboriginal artist Pamela Croft to describe her philosophy and methodology, seeing it as a way to share Australian Aboriginal and Western domains, to create alternative story sites and as a tool for healing. Croft uses the term third space to describe the interface between the two domains in which neither knowledge is privileged (Fredericks, 2006).

The notion of third space, described by Croft as one where neither knowledge is dominant was first described by Homi Bhabha in 1994. It is a feature of the postcolonial discourse, referring to it as a collaborative juxtaposition between two cultures, a space in which cross-disciplinary relationships and collaborations flourish (Bhabha, 2015). As a working space it has also been defined as; *a site of learning formed when educational, artistic, creative, and other cultural practices intersect and move outside traditional paradigms and norms* (Rochielle and Carpenter, 2015 pp.131).

The dual lens approach, whether used as a therapeutic process, pedagogy, source of inspiration or research methodology is much more than laying two very different knowledge sets side by side, that is only the first step. As with participatory action research the real work of transformation, teaching/learning, expressing or discovery is in the third space, that is, the knowledge and wisdom inherent in the synergies and resonances in the relationship between the knowledge sets and the relationships of those representing the knowledge sets.

Challenges in dual lens as pedagogy

Participatory action research is the method underpinning Old Ways New Ways both in the generation of curriculum and its implementation. Unlike the previously

described dual lens educational approaches OOWNWs was designed for students in low socioeconomic (where Aboriginal students are over represented) schools rather than specifically for Aboriginal students.

The fact that it was to be delivered in a classroom was the first challenge. Inherent in the educational system is the relationship of teacher/pupil, the latter imparting knowledge and skills to the former. In most Australian Aboriginal languages, for example in Nyoongar, the word *katitjin* describes a relationship in which teaching and learning takes place in which there is no separation between teaching and learning. In traditional Nyoongar life *katitjin* is a constant, life long process and takes place in the context of a relationship.

Old Ways New Ways can be said to be relationally based, that is, it relies on collaborative relationships rather than the typical teacher/pupil relationship. This can be seen in the partnership between two people delivering the program, always one male, one female, one Aboriginal, one non-Aboriginal. They model respectful collaboration, sharing and deference. They expand that relationship to include children in the group by inviting them to participate in the conversation they have started about, for example, *bannitch-yen* (flight) and aerodynamics. They use, what in Brief Strategic Therapy is called the curious stance (Watzlawick et al. 1974), rather than being told, children are regarded as co-researchers with program presenters asking what they observe about *dyeeda* (birds) aeroplanes, boomerangs and other items relying on aerodynamics for their function. As the children share their observations and ideas, items, or models of items, are used to test their hypotheses. Attention is paid to conceptual language with words from all the cultures represented in the classroom being incorporated into the discussion. The program then focuses on doing, constructing objects that further test their hypotheses. Students are then trained to demonstrate their research process and their findings.

The process of cooperative research identified by *Reason, & Rowan* (1981) can be observed in the delivery of OOWNW: Propositional knowing is in, for example, the aerodynamics of Australian Aboriginal and contemporary science, which is explored using practical knowing and experiential knowing then reinforced through presentational knowing. The three elements identified by *Chevalier & Buckles* (2008) are woven into the program: The presenters demonstrate a cooperative respectful relationship, using the curious stance they incorporate Australian Aboriginal and other cultural elements. Learning is based on action - the how it works in practice in

old and new contexts. Students and teachers are co-researchers learning as much about the process of sound research and their place in it as they do about the subject of research. This is a cycling and recycling process, deepening experience and knowledge of the initial proposition, or of new propositions created by the process. In the delivery of OWNSs children learn in the context of a co-researcher relationship with those delivering the program and with each other as peer teachers/learners. The enhancement of Aboriginal knowledge brings an enhanced appreciation of Australian Aboriginal culture to participating teachers and students.

The OWNWs program is demonstrating a significant positive shift in students' attitude towards science, feedback indicates that, as a result of attending the workshop, 58% of students saw science as a possible career path and almost 30% of all students considered studying science at a tertiary level.

Challenges in dual lens research

In a research project Koodjal jinnung was used to construct a conjoint history of Nyoongar boodja (land). This involved simultaneous interrogation of traditional Nyoongar and Western scientific knowledge about climate history, geology and archaeology. The research team consisted of an Aboriginal Elder with profound knowledge of land and biota, a world-renowned natural scientist and a researcher who took the curious stance in recording their knowledge and conversation. Together they analysed and wrote up the material. The team was later expanded to include a Nyoongar film maker who also became a member of the research team. Participatory action research was used exactly as described by Hawkins, (2007); collaboration meant; the research team were also the participants, all involved in data collection, analysis and use of findings.

This was the first koodjal jinnung project, the research team needed to address issues as they arose. These issues included differences between Traditional Nyoongar and Western understanding and expression of knowledge, time and memory.

Differences in the understanding and expressing knowledge

It was imagined, at the beginning of the project, that the major challenge would concern differences in the knowledge. It was soon clear that knowledge was the same, even as far back as 300 million years ago. What was different was the way in which the knowledge was held. Nyoongar knowledge was held in narrative, in stories from the Dreaming (the creation time) and the koora koora (the ancient times). It can be considered as knowledge recorded in metaphor. Western scientific knowledge consists of collections of detailed descriptions in multiple formats held in specialist discourses each with their own language. It can be considered as knowledge recorded in silos.

To enable a meeting place of expression and to meet a requirement of accessibility in project outputs, narrative was chosen as the primary expression. Thus the climatic, geologic and archaeological histories of ancient Nyoongar boodja (land) were distilled into a plain English story. This distillation process required a detailed search of each discourse, the material was sifted and summarised until a single thread emerged. This was aligned with the Nyoongar stories and, through a process spiralling and re-spiralling in which the two 'stories' influenced each other, a conjoint history of eleven eras emerged, the first eight focuses on land the last three on Moort or family.

Time

It was imagined at the beginning of the project that there would be irreconcilable differences in the concept of time. There were differences, but they were not irreconcilable.

There is no corresponding word in Nyoongar language for the abstract word time. In Nyoongar culture three ideas about time are readily expressed, the Nyitting (the cold dark time when the Spirits were active), the koora koora (a long time ago) and kedela (now or living time). The Nyitting and the koora koora are always present, held forever in the stories associated with every ridge, mountain, every watercourse as well as in the movement of the stars and the planets.

Time, as understood within everyday English language, is constructed as a flow from the past into the present and is always just beyond our grasp, into the future (Callender, 2008). Consequently, in Western culture time has its own narrative. It had a beginning (the big bang) and will presumably one day whimper its conclusion. Within those end points time is measured in different chunks in different discourses

for example there is climatic time, geological time and evolutionary time, so there are eons, azoics and olithics.

The team reconciled these differences by abandoning a timeframe, instead looking for major geophysical events and changes in climate that are recorded in both knowledge sets. There were two events in both knowledge sets that became bookends. Firstly the Nyitting, mentioned earlier aligning with the Permian Ice Age, 300m years ago and secondly Wardanaak Boodja inundation by the sea and the reformation of the coastline associated with the modern warming period around 8,000 years ago.

The other element that helped was the opening line of many Traditional Nyoongar stories. Unlike European stories that start 'once upon a time' Nyoongar stories have an opening line that locates the story in a particular era such as the 'Nyitting' (The cold, dark time) or 'kwadjart moort kwadja yokow' (before there were clans). This indicates that time, in both Nyoongar and Western culture, is used as a scale against which to pin events and changes in land, weather and people. These story openers have never previously been considered from a Western perspective, that is, collated in sequence and examined as descriptors of the changing nature of the land.

Consequently in this project Western and Aboriginal knowledges were enabled to influence each other.

Memory

There are some significant differences between Nyoongar and Western cultural understandings of memory. Nyoongar people use the term kalyakool (forever) to describe how long they have inhabited this land. This is based on a spiritual memory, a concept that is not present in Western thought.

In the contemporary Western experience memory is primarily associated with the recall of personal experience. Knowledge, particularly since the advent of the personal computer, is now stored in electronic, accessible, memory banks. It is through personal memory and the interpretation of memory that the individual generates their representation of self. Dementia, associated with the loss of the capacity to generate new personal memories and the gradual erosion of existing memories, may be feared more than death itself because it conjures a life without an identity of self (Brockmeier, 2002). Individual memory, however, is notoriously

mercurial. People are unlikely to have an identical memory of the same event. Memories that are thought to be repressed then recovered turn out to be illusions (Bonanno, 2006). Again from a Western perspective collective or cultural memory is considered to be a representative version of the past, shared by those whose ancestors who experienced it (Olick, 1999). Cultural memory, therefore, has been shaped and influenced through the process of representation and memorialising so that it arrived in the present laden with the values of the culture it represented (Olick, 1999).

The idea of a collective or cultural memory is not unknown in Western thought and there are several conceptions. For example Psychologist Carl Jung described a collective unconscious, an underlying sense of being human that is expressed in all cultures as symbols, images and themes in story and other art media (Jung & Hall, 1990, 2011). Jung's concept of a collective unconscious is often represented in terms of human archetypes including elemental figures such as great mother, trickster and wise elder. Access to the collective unconscious is almost incidental, through art, synchronicities, memories, dreams and reflections (Jung & Jaffe, 1973). None of these three Western concepts of memory are adequate in the explanation of cultural memory carried by Traditional Nyoongar peoples.

Until recently it was often considered that, in a context that does not include writing, memory of people and events were no longer accurate after 500-800 years because they are distorted by the influence of storytellers (Nunn and Reid 2015). Europeans scoffed at Nyoongar people when they spoke of a time when they walked out beyond Wadjemup (Rottnest Island) (Stasiuk 2015). Nunn and Reid (2015) have recently validated a collective Aboriginal memory of 8,000 years by the use of stories concerning inundation, which they assume are associated with sea level rises during the Holocene warming. For example there are many stories from around the Nyoongar coastline that tell of a battle between a saltwater creature and a fresh water waarkarl that settles a new coastline.

In Traditional Nyoongar society it is perhaps a capacity to be a conduit for culture that is valued when people are being considered for Eldership. Personal memory therefore is significant but mostly in its capacity to retain and express cultural memory, rather than being clogged with a zillion selfies. Cultural memory is held in metaphor and narrative for example in the creation story, 'The Carers of Everything' the Nyitting or the great glacier is lifted by the waarkarl. The Waarkarl can be

understood as a metaphor, an embodiment of the friction between ice and land that creates the ridges and valleys. Glaciers melt from below creating the river systems that we know today and those that are now but salt lakes. This enabled the spiritual or evolutionary ancestors of the flora and fauna take their place in the tracks left by the Waarkarl.

Several Nyoongar people on the research team considered these metaphors to be based on memories rather than creation theory. The human spirit ancestors participated in the creation of boodja. When they become real they brought with them the memory of creation, hence the idea of being in boodja kalyakool (forever). The spiritual memory is constantly reiterated because the story is present in the land. For Nyoongars (and others who listen) the Earth continues to speak. These two explanations of how Nyoongar culture 'remembers' ancient land, are not conflicting, they both work. If the conduit for culture, oral transmission through the generations, is broken as it was in part during the stolen generations era, then the land will restore cultural memory when the generations can speak through each other again.

Suggestions for principles and processes to guide future researchers

The joint trajectory of the dual lens approach and participatory action research can be seen in the following guides:

Ober and Bat 2007, 2008 described three principles of both ways practice:

1. It is a shared learning journey;
2. It is student centred; and
3. It strengthens Indigenous identity.

Australia's Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health (NHMRC, 2007) puts forward six values that should underpin the conception, design, and conduct of research that includes Aboriginal people; reciprocity, respect, equality, responsibility, survival and protection, spirit and integrity.

Canada's Tri-Council Policy Statement (2010): Ethical Conduct for Research Involving Humans suggests, participatory action research requires that the terms and conditions of the collaborative process be set out in a research agreement or protocol based on mutual understanding of the project goals and objectives between the parties, subject to preliminary discussions and negotiations.

In 2012 Bartlett, Marshall & Marshall advised:

1. Acknowledge that we need each other and must engage in a co-learning journey;
2. Be guided by Two-Eyed Seeing;
3. View “science” in an inclusive way;
4. Do things (rather than “just talk”) in a creative, grow forward way;
5. Become able to put our values, actions and knowledges in front of us, like an object, for examination and discussion;
6. Use visuals;
7. Weave back and forth between our worldviews; and
8. Develop an advisory council of willing, knowledgeable stakeholders, drawing upon individuals both from within the educational institution(s) and within Aboriginal communities

For Ober and Bat in 2007 and 2008 the focus was Indigenous students. For the NHMRC in 2003 the focus was respecting Indigenous people and knowledge. For Canada’s Tri-Council Policy (2010) and Bartlett, Marshall and Marshall (2012) the focus turned to the relationship between Indigenous and non-Indigenous research.

For dual lens practitioners at Edith Cowan University, a dual lens approach is participatory action research in which new knowledge is generated by a synergistic relationship between two different knowledge sets about the same subject. The synergistic process can be described in four stages:

1. It begins with a subject or concept that transcends culture, for example in the Nyoongar boodja project it was land, in the moort project the underpinning concept is that the needs of the child are timeless and universal but how those needs are met are determined by culture and environment.
2. Appropriate experts who share how it is known, used, expressed, valued and taught explore the subject or concept simultaneously. The aim is to look for resonances and dissonances that can be articulated usefully to support both communities going forward together.
3. The synergistic process can be said to function in third space as described earlier in this paper. It is a constructed, purposeful relationship with at least one birdia (expert) from each knowledge set and one person who takes the curious stance in drawing out the knowledge and recording it.
4. All participants need to be involved in the articulation of the new knowledge. This needs to reach three audiences. The production of academic papers

means the work undergoes a peer review process. The production of plain English and/or media expressions makes the work accessible in the general community. The production of material for primary and secondary students brings the not just the generated knowledge but also the process of generation into the learning journey.

Conclusion

The authors have used the writing of this paper to help articulate the process, meaning and value of the dual lens approach in the generation of knowledge. They found that in the primary and secondary educational setting the dual lens approach worked best when, in the case of OWNWs, the program was delivered using Nyoongar Aboriginal rather than mainstream educational methods. Like participatory action research this meant a *katitjin* delivery, this word describes a relationship in which teaching and learning takes place where there is no separation between teaching and learning.

The authors found that in a context of research the dual lens approach required the construction of mutually respectful third space in which neither knowledge is privileged. In this space researchers needed to share how a subject is known, used, expressed, valued and taught. The aim is to look for resonances and dissonances that can be articulated usefully to support both communities going forward together.

Dual lens research has, for the authors, been a magical, joyful place experience.

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