Desert Drawing: from pigment to (Apple) pencil

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The ability to digitally draw is ingrained within contemporary visual design practices. Drawing is a way of recording, representing and communicating that reveals the identity and voice of the creator as they design for a communication purpose. This paper presents a case of how a group of young Indigenous students re-interpret traditional culture through the act of drawing, as they move from analogue to digital technologies. Through a series of design workshops, the drawing styles of participants from remote Central Australia were recorded and analyzed. Workshops were based within Youth Participatory Action Research methodologies and embedded within Indigenous pedagogies. Results show the ancestral essence of country, connectedness and story remain ingrained within these new digital forms. Initial findings reveal three core themes; drawing as research practice, drawing as cultural practice and drawing through technology. The ability to draw in a new, digital way can create numerous benefits to developing the creative practices of young Indigenous people, as well as social and economic benefits within remote Australia.

drawing; design; indigenous; aboriginal

Acknowledgement of Country
This project acknowledges the traditional custodians of the land on which this research has been conducted, the Western Arrernte people, and their Elders past and present. This research is grounded in acknowledging and protecting the continuing ownership of traditional knowledge, cultural expressions and intellectual property rights of its participants.

1 Introduction
The ability to digitally draw is ingrained within contemporary visual design practices. This paper presents a case of how a group of young Indigenous students re-interpret traditional culture through the act of drawing, as they move from analogue to digital technologies. Drawing, as an ethnographic exploration, is a way of recording, representing and communicating that reveals the identity and voice of the creator as they design visible objects for a communication purpose. To examine the
process of drawing as a meaning-making design activity, I utilise a case of working with Indigenous youth from Ntaria, a remote Aboriginal community in the Central Desert of Australia.

The following questions framed the research; (1) can traditional creative practices adapt to digital ways of working, and (2) do these tools support or erode traditional culture? These inquiries are investigated through a broader research project that is centred on understanding how Indigenous young people reinterpret their traditional culture and creative practices through working with innovative digital design tools.

Australian Indigenous art is the oldest ongoing tradition of art in the world, dating back some 30,000 years. The introduction of post-colonial mediums such as acrylic painting, radio and film have become sites of agency, resistance and self-determination for Aboriginal and Torres Strait Islander People. What happens then when you introduce a new digital creative tool into a community of thousands of years of strong creative traditions, embedded in cultural and spiritual practice?

The importance of this case for the design research community is concerned with what value design can bring to historically marginalized voices, but also what value these voices can bring to design. The Australian design industry has historically had limited understanding and lacked influence from the important creative sources of Indigenous Australia. Through looking at the practice of design through the lens of young people from Ntaria, we can reframe the ‘act’ of designing in relation to Indigenous ways of being, knowing and doing. Indigenous approaches challenge current Euro-centric understandings of how visual communication design is introduced, taught and practiced within cross-cultural contexts. It is examined here, through the tools and technologies of digital drawing.

This research project employed a methodology informed by decolonising perspectives and Indigenous ways of being, knowing and doing. This allowed for a re-interpretation of design processes and outcomes, as situated and mediated through the physical location of Ntaria. Design researchers in cross-cultural contexts need to be situated, not just as co-designers or co-participants, but also as trusted facilitators, trying to bridge the gap of ‘outsider’ and reframe power dynamics within design and representation.

Digital drawing was introduced to 20 young Indigenous People in Ntaria through a series of design workshops over 12 weeks. These workshops were based within Youth Participatory Action Research (YPAR) methodologies and informed by Indigenous pedagogies. This was embedded within a framework of creative participation – that through using Indigenous ways of knowing, young people in remote communities can use design (through digital drawing) as a tool of empowerment and positive social change.

Results reveal that Indigenous groups can create and renegotiate interactions with digital drawing technologies. This allows for an exploration of how different knowledge traditions engage with design tools and create new potential sites of innovation. Incorporating Indigenous Knowledge approaches becomes imperative in understanding the capacity in which design tools can take on new meaning within new spaces of engagement. Drawing in a new digital way has the potential to stimulate new visual styles within Indigenous creative practice, while empowering young people to take control over their creative futures.

2 From analogue to digital tools

Drawing represents an on-going process of selection, reflection and change (Stones & Cassidy, 2010). Fish and Scrivener (1990, p.122) discuss how drawing involves both manipulation of mental imagery and perception of external elements in partnership. Tools are also used to externalise ideas and mental images. A drawing tool may then be defined as a ‘moving entity whose use is initiated and actively guided by a human being’ (McCullough, 1998, p. 68). The specific purpose of the drawing tools in this study, was designing forms of visual communication, as the hand is physically extended by an ability to make external marks, be those on paper or a screen.
Within visual communication, considering and selecting the content, layout and tools to make a drawing is a design process. It is a series of conscious decisions leading to a visible object that fulfils its communication purpose: it tells a story, shows an idea or explains an issue.

The digital design tools within this research refer to iPad-based graphic software, namely working with vector-brushes and digital shapes within the Adobe Draw app. Here, selection and manipulation of pre-defined shapes or freehand lines can occur. Digital drawing (or digital visual communication) is the focus of this paper, as the participants learn to draw in a new digital way for the first time. Yet it is also important to mention traditional cultural uses of drawing within this paper. This provides a context for the introduction of new tools within a specific visual culture; to understand their value and measure their impact.

3 Country as being: the remote desert context

Below the social and historical context of the study are introduced to provide a background to the location and create a sense of identification with the participants and the implications of living within a remote Indigenous community.

Figure 1 Ntaria (Hermannsburg) location (orange dot) in relation to Alice Springs (black dot)

The remote Aboriginal community of Hermannsburg, known locally as Ntaria (see Figure 1), was the physical location of this study. It is located in the traditional lands of the Western Arrernte people, an Indigenous tribe of Central Australia and the custodians of Central Desert country. Believed to have been living on their lands for more than 20,000 years, the Western Arrernte maintain a strong connection with traditional language and culture.

Aboriginal concepts, such as ‘relatedness’, ‘kin’ and ‘country’ are central to Western Arrernte experience, yet hard for non-Indigenous people (such as myself) to describe and understand. ‘Country’ embraces the people, plants and animals of a place as well as its seasons, stories and creation spirits. Country is not static, but living, a place of belonging, a way of believing and a sense of responsibility (Austin-Broos, 2009). ‘Relatedness’ is a way to describe social relations in Aboriginal life, where every-day interactions are centered on the maintenance of relationships, from country, kinship and family (Myers 1979, 1991).

Most Arrernte people are economically and socially marginalised in terms of access to governance, services, employment, housing and education (Foster et al., 2005). The cumulative impact of Ntaria’s history, like much of Indigenous Central Australians has entrenched many of the Arrernte as a fourth world group. The Western Arrernte are still largely marginalized from engagement with market

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1 The term Fourth World traditionally refers to marginalized and oppressed groups such as Indigenous peoples living either in Third World (relatively undeveloped) or First World (developed and capitalist) countries.
society, with a large dependency on welfare. In Western Arrernte life, where connection and relatedness is paramount, the result is seen in emotional tensions within and between genders and generations (Sutton, 2001).

4 Ntaria Mob: The participants

As this study focuses on young people living within remote communities, it is important to mention common social circumstances of living within these contexts.

The common Western trajectory of education leading to employment is not played out in remote Australia. As a consequence, Indigenous youth are struggling with identity. Teenage boys tend to drop out of school after passing through initiation ceremonies around the age of 14 or 15 and show a greater tendency to spiral into substance abuse, anti-social behaviour and incarceration. Poor school attendance, low retention rates and uneven levels of English literacy and numeracy are present across both genders (Kral, 2011).

It is not surprising that research continuously shows remote Indigenous youth struggle to find their place both within their own communities and wider Australian society. Tonkinson points to their capacity to endure hardship, to innovate and be resilient as factors that will ultimately enable young Indigenous people ‘to forge new and rewarding paths to fulfilment in the greatly changed world they inhabit’ (2011, p. 234).

Outside of the school context, Indigenous youth, enabled by wider access to new technologies such as television, video games, digital photography, the internet and mobile phones, are keen consumers of global youth culture. Central Desert youth now ‘perform’ differently, adapting to contemporary realities (Kral, 2011). There is growing literature supporting that Indigenous children are not just passively receiving culture (LeVine & News, 2008). As Eickelkamp explains, ‘children are active learners; they make and remake culture and history – as innovators and keepers of language, certain modes of knowing and bodies of knowledge, artistic practice, moral codes, patterns of behaviour and social norms’ (2011, p.2–3).

5 A framework for Indigenous design research

5.1 Indigenous design perspectives

This project is framed through an understanding of design based within visual knowledge, traditional practice and expressions of cultural creativity. Bratteteig et al explain:

‘There is knowledge that lives in the design process and is embedded in designed artefacts. There is knowledge we generate as researchers-observers, and knowledge that stems from also being engaged in making digital designs – which sometimes involves making them happen as an occasion for studying them’ (2010: 17).

The Ntaria case study covers this range of design and research practices. Working cross-culturally situates this project within both necessary disciplines - between designerly ways of knowing (Cross, 2001) and Indigenous ways of knowing (Martin, 2009). It is when design knowledge combines with indigenous knowledge that forms this projects core focus.

This research is positioned within the communication design field, as the tools and techniques of digital drawing were introduced from a visual communication perspective. This offers an approach into the relations and interactions between tools and digital expressions where the object of activity is communication, whether narrative or aesthetic.

Akama (2008: 161) asserts that:

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“Communication design is a process that is based on how to apply and manifest different kinds of understanding and to explore what designed outcomes could mean for different people. Embracing and acknowledging the diversity and multiplicity of viewpoints of all stakeholders can allow the design process to explore the potential and possibilities of the meaning of different design outcomes”

This framing embraces diversity and difference, based within the processes and outcomes of communication design.

Looking at social-cultural perspectives on communication design, Stuedahl et al. point to the practices and tools of communication design allowing for the emergence of digitally mediated meaning making (2010: 68). That communication design research builds and analyses design for, and communication through, digitally mediated interfaces. This involves the multimodal mixing of cultural, symbolic and mediated materials that entails a complex blending of design practices and user knowledge and experience (Stuedahl et al. 2010: 68).

Different cultures will have different perceptions on what it means to ‘do’ design and embed their own knowledge within the process and subsequent outcomes. Different cultural representations of design, and their implications remains relatively unexplored within (Western) design literature. This project examines design at the cultural interface; between traditional craft and creativity and Western design & technology.

5.2 Research methodologies

Research on Indigenous issues should be carried out in a manner, which is respectful and ethically sound from an Indigenous perspective. Therefore, the methodological framework is centered within a decolonizing perspective; necessary within Indigenous research given the existing social inequities that Indigenous peoples continue to experience. A decolonizing approach enables a framework that seeks out Indigenous voices and representations within a research field, that has historically marginalized and silenced Indigenous peoples (Smith, 1999). This approach also acts to decolonize Euro-centric design education, principles and practice within Australia.

In discussing the representation of Indigenous knowledge, the work of Smith in Decolonizing Methodologies is imperative, as she advocates for methodologies that have the potential to ensure that research with Indigenous peoples can be ‘more respectful, ethical, sympathetic and useful’ (1999, p. 9).

As a non-Indigenous researcher working within Indigenous research, I needed to ensure the project did more than just follow ethical principles, but that I become a collaborator in projects and processes that respect and promote Indigenous aspirations. Being involved, establishing and maintaining relationships allowed me to better understand participant aspirations and how this research can be both useful and fit within established cultural practice. I have aimed to ground my work and give voice to Western Arrernte identity, values, aspirations, and specifically to give voice to Ntaria design understandings, processes and outcomes.

From a design perspective, collaborative, participatory and action-based research methodologies are generally identified as being compatible with the goals and emerging reform agenda for research involving Indigenous peoples. These methodologies, particularly participatory action approaches are well suited to creative research that requires ongoing participation, collaboration and reflection. As Denzin describes:

These are narrative, performative methodologies, research practices that are reflexively consequential, ethical, critical, respectful, and humble. (Denzin in Denzin, Lincoln & Smith 2008, p.936)

Through there are many approaches to design and participatory research that could have been used to address the complex methodological realities of this project, YPAR was chosen. This approach values the voices and knowledge of youth, challenges the injustices that many marginalized youth experience, and empowers participants to make changes in their communities (Cammarota & Fine, 2008).
YPAR recognizes that young people are often socially constructed in ways that do not match their realities or potential. It allows young people to ‘contest, challenge, respond to, and negotiate the use and misuse of power in their lives’ (Ginwright & James, 2002, p. 35). Research is therefore conducted with youth; around the issues they find most important in their lives.

The YPAR approach places value on creative participation, and the resulting design workshops fostered a collaborative exchange between teaching and learning of digital drawing and traditional culture and beliefs. Research focused on instilling the confidence and the technological knowledge for young people in Ntaria to develop skills and outcomes that utilized their own ways of being, knowing and doing - promoting their traditional creative knowledge within new contexts.

6 The Ntaria approach

The broader research project was designed over numerous months (and many community visits) in conjunction with the students and the wider community. This ensured the voices of the students were privileged, the project was useful to the community and ethical approaches were followed. This extended development period allowed the students to be actively involved in decision making processes and have the opportunity to collaborate on the form and content of their design workshops and subsequent creative outcomes.

Design workshops (Martin & Hanington, 2012) were held with 20 Senior Students at Ntaria School, aged 14-18 over a period of 6 months. With the unpredictability of community life and numerous cultural interruptions to students learning and attendance, the project moulded to fit within its context and the circumstances at Ntaria. This long-time frame was critical to give participants the space, freedom and time to explore, learn, collaborate and share their knowledge.

Design workshops were selected as an appropriate method as they focus on collaboration, the incorporation of academic and community knowledge, and outcomes that can contribute to positive change. The critical features of design workshops are that researchers can stay on track with planned activities/outcomes while remaining adaptable to changing circumstances and group dynamics. Problem solving by design is also exemplified within design workshops and they additionally align with Indigenous pedagogies, Aboriginal Ways of Learning (Yunkaporta & Kirby, 2011) and evidence-based curriculum design.

The design workshops consisted of participatory sessions, and focused on design exercises for an assigned brief. These sessions focused on introducing students to the technical knowledge of digital drawing through working on an iPad and the Adobe range of digital drawing apps, such as Abode Draw. The students were introduced to key digital design concepts, such as layering, opacity, replication, and shape creation – not possible with analogue forms of drawing. How they implemented these new possibilities into their work was analysed throughout the project as their skills, competence and experimentations working with the digital drawing tools developed. The design tasks included designing a logo, poster, school signage and t-shirt graphic – all visual tasks based in communication.

There was no visual or process direction given to students, as the research was concerned with if and how the students would embed their traditional creative practices with design tools and ways of working. Workshops were often taken out of the classroom, to gather materials, such as local bushfoods, to photograph, capture, and trace on the iPad, or to photograph the landscape for creative inspiration and colour swatches. This also enabled time to ‘be’ on ‘country’, to share stories and local knowledge; for me to learn what was important to them and give context to their stories. This was additionally supported by the mobile technology, allowing students to integrate place, story, culture and knowledge into their creative tasks.
7 Drawing as design research

Different cultures will have different perceptions on what it means to draw and to design, as they embed their own knowledge within the process and subsequent outcomes. This research situates the introduction of digital design tools firmly within socio-cultural approaches, as human action, marks and interpretation are ingrained within culture, communication and context.

Questions of culture, through which each of us encounters and makes sense of the world around us, have been recognised as crucial to understandings of design. Indigenous knowledges encourage us to deepen our understandings of the ways in which culture and knowledge are entwined and shape any idea of what ‘design’ might be. This paper is concerned with Western Arrernte cultural representations of design, specifically through digital drawing. As principals of design practice are predominately Euro-centric, it raises the question of what meanings will be re(produced) in cultures by representations of design? Will the introduction of design tools change the creative practices of young people, or perhaps create a new design language through the introduction of new digital ways of drawing?

Figure 2 Design workshops in Ntaria, clockwise from top left: Collecting bushfoods, leaves and seeds to use as design inspiration; Walking on country to rock engraving site to tell stories; Collecting bush bananas, a local bush food; Sharing stories and local knowledge. Images authors own, 2017.
7.1 Colonial encounters
Drawing has been an integral part of cross-cultural interactions in Australia from the earliest encounters between Aboriginal people and European settlers (Hinkson, 2014). Sayers suggests Aboriginal drawings were collected by Europeans both as sources of information and as evidence of Aborigines’ aptitudes and capacities (1994, p. 71). Hinkson suggests another kind of appreciation, ‘a fascination with what these pictures could provide by way of unprecedented access to the distinctive ways of seeing, their inner lives, of their producers’ (2014, p. 30).

The commissioning of Aboriginal drawings was common practice amongst anthropologists of this period as drawing was a productive means of eliciting information and understanding around Indigenous people’s ways of life. These anthropologists claim they did not interfere in the subject matter or style, instead focussing on drawing content. Berndt observed during the 1950s that visual forms in the anthropological works were of marginal interest, due to the apprehension that taking active interest in the forms as ‘art’ would undermine the objectivity required of the ‘scientific approach’. Yet what remained unexplored was the ways in which these drawings became more than just artefacts collected by anthropologists.

The introduction of new drawing tools and mediums, such as pencils and crayons, paper and canvas, required Aboriginal artists to learn to integrate their traditional practices into new forms. The introduction of these apparently benign Western tools significantly impacted on Indigenous creative practice and its outputs. With new tools came new design questions, such as how to use introduced media to best effect, or how to employ a colour palette well beyond the traditional ochre hues. Perhaps one of the most remarkable things to note is the ease in which Indigenous practitioners were able to adopt the newly introduced tools and mediums, immediately seizing upon their potential for new forms of artistic expression.

7.2 Redrawing the boundaries
Drawing is a way to understand participants’ values, interests and ways of working. Many studies in design have emphasised the importance of drawing, as visual thinking, as a sequence of design moves (Goldschmidt, 1991), ‘having a conversation’ (Lawson, 1994) or a ‘graphical conversation with the materials of design’ (Schon, 1992). Western interpretations of design-based drawing generally refer to sketching, modelling and drafting (physically as well as digitally) as a means to generate ideas, explore and communicate design. However, within an Indigenous context, there exists an opportunity to extend this understanding.

Design research within a specific visual culture needs to be characterised as situated and mediated by the physical location in which it is undertaken. Place and country form imperative perspectives for young people living in remote contexts and as such, design needs to analysed from this perspective. Grounding these activities in Ntaria allows us to observe drawing as a meaning-making activity in a modern day cross-cultural context. The outcomes are firmly Ntaria perspectives of design, narrative and story.

Design involves reasoning, making decisions, expressing ideas and taking action. Drawing as a design research tool acts a vehicle to explore students’ decision making with digital outcomes. Their pencil drawings may reflect their Indigenous Knowledge, but their digital expressions and the way they transfer that knowledge onto a digital medium is a record of the designer’s thinking. How they apply new possibilities, made available by digital tools and programs reveals the adaptability of traditional knowledge, and the capability of the students to engage with design tools.

The design workshops revealed that the Western linear process of design (from design brief, to concepts, refinement and final product) is not mirrored in Western Arrernte ways of working. The Ntaria design process is circular, combining knowledge over generations, finding new ways to share traditional stories. Stories are repeated, danced in ceremony, painted on the body, drawn in the sand, which each new interpretation making them new again. Students’ initial drawings or ‘sketches’
at the beginning of the design process were more about re-enacting these stories, not concept
development. Through the process of drawing, their story becomes alive again, it is retold by marks
on paper or on digital designs on an iPad. Students innately know these stories and designs – they
need no visual research, they are intrinsically part of their family, culture and identity.

This new design practice emerging from Ntaria offers a challenge to our current understandings of
communication design education. Although still an evolving practice, design in Ntaria is primarily
about communicating, utilising the common tools of the discipline. Yet the values and narratives that
it communicates are firmly Ntaria perspectives, enabling a new cultural perspective to the discipline.
Communication design within Ntaria can be realised through the interplay of tools and signs with
technical and cultural resources. Together these depend on and are constituted by a complex mix of
relations (Thackara 2005) between appropriate tools, their introduction, technology access, and how
these fit within culture and place. Design offers a way for young Indigenous people to express
themselves, to share their knowledge about their country, culture and their place within
contemporary society.

8 From sand to screen: Drawing as cultural practice

Indigenous Australian drawing practices, honed over thousands of years, weave art with storytelling.
Prior to colonisation, paintings by Aboriginals were drawn on rock walls, carved as petroglyphs,
painted on bodies and most significantly drawn in dirt or sand. Sand drawing is an elaborate
combination of narration, song, signs, gesture and drawing. As Munn (1986) observes, ‘the areas of
bare sand characteristic of central Australia provides a natural drawing board permanently at hand.’
These markings are a system of ‘talk’ in an Arrernte manner, and often serve as an iconic system for
representing events, in effect, as a graphic written language.
In Ntaria adults still tell stories about the land and ancestors through sand drawing. These stories are sometimes mythical or ‘dreamtime stories’, about how people, animals and the land were created, but also about journeys and hunting trips and contain information about where to find water, food, how to hunt animals and so on. As they tell these stories, they illustrate the events in the sand using traditional symbols. For example, concentric circles may be a meeting place, camp, a watering hole; a wavy line might be a track, a river or snake. The stories often involve a journey and the combination of story and drawing is required to extract its meaning.

Students are still using these same symbols today and the traditional practice of sand drawing is being re-interpreted with new technology. Working digitally, the iPad allows for a re-imagining of drawing practice. Instead of drawing with their fingers in the sand, students swap this for the screen, effectively creating a new contemporary reinterpretation of cultural practice.

![Figure 4 Participant 1. Age 14. Honey Ant Story, Digital Drawing, 2017](image)

Figure 4 depicts a Honey Ant story, a common dreamtime story from the Central Desert area and a traditional bush food. You find their ‘houses’ or ‘camps’ as described by Participant 1. The honey is then sucked from the ants.

*This is a design of people sitting down digging for honey ants. The ants are going to their houses and finding which place they are going to camp. Honey ants are important because they are good bush tucker. They are good to eat!* (Participant 1)

Depicted in the drawing are four women sitting, digging into the honey ant tunnels with their digging sticks to collect the honey ants. The woman is shown by the ‘U’ shape with the digging stick and coolamon beside her, common tools in collecting bush foods. The drawing effectively acts as a story on how to collect the honey ants, and where to find them buried in their ‘houses’. It reveals the participant’s knowledge of this cultural tradition.

It is through the use of symbols, now created on an iPad through duplicated bold coloured shapes, that the participant has used contemporary technology to tell traditional stories in a new way. The importance of the content cannot be underestimated. Although exposed to Western media and
culture, participants chose to depict traditional knowledge. With a wealth of accessible images of
global youth culture at their fingertips, the students fashion and music choices influenced by
American rap and R&B culture, it is significant the students draw upon cultural stories.

Cultural identity remains a large part of community life for young people in Ntaria. With Indigenous
language and cultural practices becoming eroded and disappearing at alarming rates, it positions
design as a contemporary way to reinvigorate culture for young people. The majority of the
students’ drawings depict events and stories of ancestral creation and traditional understanding.
Digital drawings give a new shape, form and colour to Western Arrernte ritual knowledge.

Figure 5  Participant 3. Age 14. Bush Tucker Story, Digital Drawing, 2017

Figure 5 shows a family collecting local bushfoods. It highlights how forms of drawing are critical in
intergenerational knowledge transfer within Indigenous communities. In the participant’s words:

My favourite things to do are sharing stories, going hunting, looking for bush tuckers.
My ideas come from the bush. From going out hunting and my Grandparents talking
about stories. (Participant 3)

These results also highlight how design fits within a broader socio-cultural framework. The outcomes
are less about style, form and function, but about cultural meaning, identity and storytelling. Designs
are about caring for country, respect for culture and traditional knowledge. The drawings act a prism
through which to explore Western Arrernte experience and reveal how young people from Ntaria
see their place in the world.

9  Drawing through technology

Developments in technology have radically changed many aspects of the professional practice of
design, including approaches to drawing. There is relatively little information available on how young
people in remote Indigenous Australia are shaping the creative, cultural and communication uses of
these new technologies. This is supported by Kral, who notes ‘accounts in public or policy discourse
tend not to portray the creativity and agentive participation of remote Indigenous Australian youth
in new forms of cultural practice and production’ (2011, p. 6). Young people continually show themselves to be adept at integrating cultural forms into new technology. They perceive significant differences, but also continuities, between digital and traditional modes of communication and, for the most part, are keen to incorporate the new technology into their lives.

Students had no experience creating on digital devices before the workshop program began. This was their first introduction to drawing on a screen and working digitally. Students drew their images using the Adobe Draw app on the iPad, with some students preferring the use of the Apple Pencil, while others worked with their hands. The pencil provided an intuitive tool to transition students from working on pen/paper to the digital context. Some students preferred to draw by hand first, before creating their design on the iPads. But they did not see the pencil drawings as ‘early sketches’ but as a means of storytelling.

*I draw the stories first on paper and then I make them on the iPad. With design, you use different shapes and there are different names for things.* (Participant 3)

Some students preferred to directly ‘trace’ their pencil drawings on the iPad, by photographing the image, creating a new layer and then directly re-creating it digitally. Others however utilized the potential of the technology, creating innovative aesthetics through the digital tool kit at hand.

As shown in Figure 6, the pencil drawing of the Waterhole story is re-invented through the use of digital drawing tools. It is an intrinsically digital image, utilizing new approaches, particularly to colour and new techniques, such as the use of perfect circular ‘shapes’ made possible through the digital format. It is also worth noting colour has only been added digitally; colouring by hand is a labour-intensive method in comparison to the quick application of colour on its digital counterpart. These design decisions made by the student allow us to analyse the use of digital tools and how this impacts on creativity, creative output and knowledge production.
As these students were working for the first time in a new medium, it presented opportunities for aesthetic innovation and experimentation. They found inventive ways to use the technology, drawing on different techniques to create straight lines depending on their knowledge of the application (See Figure 7) or to achieve a traditional dot painting effect with digital drawing (See Figure 8).

Figure 7  Students draw a straight line on the iPad using different tools. Left: Student uses a ruler to draw a line with the Apple pencil. Right: Student uses the digital ruler tool to draw a straight line on the iPad. Source: Images authors own, 2017.

Figure 8  Students use different methods to create traditional dot drawings. Left: Student uses the Apple pencil directly onto the screen to create the dot effect. Right: Student traces dots from a drawing using his hands. Source: images authors own, 2017.

The digital drawings that emerged from the workshops exemplified the existing creative skills of the students, particularly in applying their cultural knowledge to new digital media. Through the digital format students were also able to share their design with family, friends and the community, creating and sustaining new and unforeseen meanings, connections and impacts.

10  Implications for design and for Ntaria
What does this case then reveal to us as communication designers and design researchers? This project was a two-way teaching/learning exercise. It questioned what can we, as design researchers, learn from Indigenous approaches to the discipline? And what value can design bring to Indigenous youth living in remote communities?
From these results we can conclude that young people from Ntaria can adapt traditional creative practices to digital ways of working, and these tools support traditional culture and give voice to Ntaria youth.

The implications of this case begin with expanding our current understanding of cross-cultural communication design and positioning it within specific visual cultures. Design in Ntaria highlights design processes do not necessarily translate across culture. When working cross-culturally, researchers cannot merely overlay the common Western trajectories associated with design processes. Cultural meaning and social purpose are imperative here. Introducing new tools and design processes need to fit within place-based understandings of country and relatedness. Therefore, cross-cultural approaches to design must be situated and mediated from a specific cultural context. There is no pan-Aboriginal, or Indigenous approach. A reimagining of communication design from a specific remote desert community, would contribute to our understandings of the social, cultural and economic dimensions of design. Creative research outcomes could facilitate the natural evolution and contemporary relevance of Indigenous visual culture in Australia. It also contributes to the recognition of Indigenous Australia as a fertile and important place for the fostering of design practices.

In terms of what value design can bring to remote communities, drawing enabled young people to express their identities in contemporary ways, giving a historically marginalised and silenced group a voice and sense of agency.

Learning to draw in a new digital way can both stimulate new forms of creativity and expand the scope and outcomes of Indigenous creative development. The nature of digital drawing tools allows students to leverage their basic knowledge and apply it to a range of fields and outcomes. These digital forms are where the potential for innovation lies, as new sites of capacity building, enterprise development and sustainable livelihoods.

Maximising the creative and technological capabilities of any culture is vital to producing the factors conducive to developing innovation through design. It was clear the outcomes of the design workshops had potential market currency: students were able to digitally print their design work on a range of materials and sell them within the community. These outcomes also held social currency within the school, as younger students were keen and eager to participate, and older community members were interested in what the students were designing. Strong culture is fundamental to Indigenous wellbeing, and such support for Indigenous culture through new creative mediums provides a solid foundation to enable outcomes and economic participation in remote communities. Although in its early stages, this research also hopes to address the chronic under-representation of Indigenous Australians in the technical design professions, such as communication design, product/industrial design and digital media design, by making their tools of use more relevant and accessible to Indigenous Australians. Drawing here is the foundational knowledge necessary for design. Learning to draw in a digital way has the potential to create meaningful employment opportunities within design professions whilst maintaining cultural integrity.

11 Conclusion

Through the prism of these drawings, we can see an affirmation of Indigenous culture through digital drawing. The drawings reveal that young people in Ntaria are visually connected to their traditional imagery and iconography, despite the introduction of a new digital technology. It is through new tools that young people can reinvent their cultural knowledge to suit a contemporary aesthetic. Highlighted here is an inextricable relationship between the past and the present, the richness and beauty of their cultural heritage, but also the uncertainty of their future.

While it is impossible to quantify the long-term impacts at this early stage, it is hoped that this paper will contribute to a broader discussion and understanding of design, one that seeks to incorporate
Indigenous perspective of process and outcomes, which will ultimately benefit design and expand the scope of the industry.

The designs that are emerging from Ntaria, and the use of drawings as research tool, is a highly fertile ground for the investigation of creativity, the role of new technologies and the incorporation of Indigenous Knowledge within design. It is hoped these new perspectives open the door to developing new approaches and techniques, within remote Australia and the wider design industry.

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### 12 References


About the Author:

Nicola St John is a PhD Candidate at Swinburne University of Technology. Her research explores the transfer and impact of innovative digital technologies on creative practices in remote Australia.