

Frogs in the Drain — Children's Perceptions of the Tropical Landscape

**Dr Reesa Sorin, James Cook University &
Professor Iain James Gordon, CSIRO**

Dr Reesa Sorin is the Coordinator – Early Childhood Education/ ECE Online at James Cook University. This paper is co-presented with Professor Iain Gordon (CSIRO) and Ms Karen Argus (JCU).

Abstract

Children's perceptions of their environment carry with them into adulthood, determining their capacity to learn about and interact with their world. It is, therefore, important for children to have an informed knowledge of the role, value and function of the environment. The Arts and storytelling are ideal tools with which to glean understanding of children's knowledge of the environment and teach environmental sustainability.

Children in urban and rural settings in far north Queensland were asked to draw pictures and tell stories about the environment in which they live. This paper examines, both quantitatively and qualitatively, their creative representations of the tropical landscape.

Introduction

Far North Queensland's ecosystems are some of the most diverse in the and valuable in the world, ranging from the Great Barrier Reef to tropical rainforests, and naturally air conditioned tablelands (Westoby, 2005). These ecosystems are sources of clean air, water and primary production, so their maintenance is essential to our survival. Young children will be the future environmental caretakers of Australia's precious resources; so it is essential that they have an understanding of and appreciation for the role, value and function of the environment.

Michaels (2009) notes that "Early connections to the environment and environmental sustainability are a basis for the future, as children will grow into young adults with an affinity for the environment and the Earth, and into adults who are able to make genuine contributions and informed decisions about climate change, global warming and sustainability" (20 – 21). Yet with increasingly crowded curricula, focus on academic

success, and the popularity of the media culture (television, computers, video games, etc.) many children today suffer from what Louv (2008) calls “nature deficit disorder.” “Nature deficit disorder describes the human costs of alienation from nature, among them: diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses” (p. 36). An extensive study of children’s conceptualisations of the environment highlighted this attitude:

In general, the majority of young people see the environment as ‘something out there’ – a place, possibly including living plants and animals, but essentially separate from themselves” (Loughland, Reid, Walker & Petocz, 2003 in Martin, 2007, 58).

Reassuringly, Louv states that nature deficit disorder can be recognised and reversed through a positive physical connection or reunion to the outside world.

The research presented here aimed to develop data collection tools and methodologies, taking an arts-based approach, to discover children’s perceptions of their environment and to begin to understand how young children perceive the tropical landscape in which they live. As Cornett (2007) notes, “The arts are viewed as indispensable sources of cultural and historical information, givers of diverse perspectives and values and remarkable tools to make meaning” (p.2).

Louv (2008) states that the arts stimulate learning, particularly in learning about and interacting with nature. However, the opposite is true, where “nature education stimulates cognitive learning and creativity, and reduced attention deficit (p. 138). “Can we teach children to look at a flower and see all the things it represents: beauty, the health of an ecosystem, and the potential for healing?” (137).

Methodology

This research took an Arts approach, with main foci drawing and storytelling. According to Crook (1985 in Barazza, 1999), researchers who have used drawing as a data collection tool have recognized “that the content of children’s drawings may provide insight into their thoughts and feelings about the world (Crook, 1985, p. 49). But “*we cannot take children’s drawings as printouts of their mental images of the topics drawn*” (Jolley, 2009, p. 114) so storytelling, when it occurred, was an important source of information.

Research participants were early childhood and primary students in 5 classrooms of three state and private schools in rural, remote and urban areas of far north Queensland. Method differed slightly from class to class, as a main focus of the research project was to test methods of data collection. Approximately two hours were spent in each class gathering data. Each class was offered materials: A3 paper and pencil cases containing crayons, pastels, textas and pencils, to be shared at tables. In Schools 1 and 2 a number of children used rulers from their desks, usually to draw window frames. In School 3, children used paint, paper and other art supplies in the classroom as well as those provided by the researchers. Analysis was both Quantitative and Qualitative as we sought to determine what the children actually see in their environment and how they feel about what they see, as well as which arts methods are most useful for gathering data about the environment.

The three schools that participated in this research were from three quite different environments within North Queensland. School 1 was a private school, located within the central business district of a small coastal city in North Queensland. School 2 was a rural state school situated in an open forest area, and School 3 was a remote state school in a largely agricultural area of flat open woodland. Each school and its methodology are described below.

School 1

In School 1 is located on the Queensland coast, with the city's main attractions its proximity to the Great Barrier Reef and tropical rainforests. Tourism is a major focus of the economy. Two classes from this school were recruited: a Year 2 and a Year $\frac{3}{4}$ class.

As an introduction to data collection, the researchers read to the class and discussed the book *Window* by Jeannie Baker. *Window* tells the story of a boy growing up in an increasingly industrialised landscape. Butler (2008) describes the story as follows:

In the first panel a woman stands at the window, holding a baby, looking out at bush teeming with bird life and plants, with wooded hills beyond. The double-page spreads follow the view from the window as the baby grows up. And as he grows, the landscape seen through his window changes, reflecting the impact of the expanding community.

The trees and birds gradually disappear, to be replaced by houses, roads and supermarkets. The last panel, showing the grown-up baby holding his newborn child as he looks through a

different window at a pristine piece of bush set aside for a housing estate, brings the 'story' back to the beginning.

Following the book and discussion, children were asked to draw

what they saw in their environment from *their* window. As children worked, their comments were recorded in notes were taken by the teacher and researchers and, when they had finished their drawing, they had the option of writing or telling a story about it, and also of sharing what they had drawn with the class.

School 2

School 2 is in a rural town, situated along a main road and close to regional centres. Surrounded by sclerophyl forest, this town is located is considered to have an ideal climate. Small in numbers, the two classes in the school were recruited for this research: a Preparatory to Year 3 class, and a Years 4 to 7 class. The data collection procedure was the same as School 1, where *Window* was read and discussed and children were asked to draw what they saw in their environment from their window. Again, children's comments were recorded as they worked and they were given the storytelling option upon completion of their drawings.

School 3

School 3 is located in a remote, drought-stricken farming community, with eucalypts and open woodlands. Most children live on farms some distance from the school and are bussed to classes. A two-class school, children from the Preparatory to Year 4 class were recruited for this research.

By this stage of methodological development, the researchers had decided that the book and discussion had too great an influence on the drawings, and that making storytelling optional limited our understandings of what was in the drawings. So it was decided to take a role-play arts-based approach with this data collection.

The researchers entered the class in the role of tourists from Scotland and Canada (both researchers have migrated to Australia from overseas), wanting to see and learn more about the children's local environment. As the children were keen to help, they were asked to draw pictures and tell stories about their pictures. While they worked, their comments were noted

by the teacher and researchers, and when their drawings were finished, they told or wrote a story about their work and shared the drawings and stories with the class. The researchers/tourists thanked the children and left to look for the plants and animals children had put in their drawings.

As pre-planned, the researchers/tourists returned to the class, having “seen” much of what was in the drawings, but disappointed to not have seen any frogs. The children’s response were further drawings of where frogs could be seen, and a tour to the school toilets, where frogs were hiding in the drain.

Data were analysed quantitatively, by counting whether objects such as trees and houses were present in the drawings, and qualitatively by looking at elements of design such as line, colour and shape, and attempting to classify the mood of the drawing. Information from stories added to our understandings of the drawings.

Findings

Quantitative assessment

Table 1 below charts the Quantitative findings by percentage of children in each school who included the various items in their drawings.

Items	School 1 (%)	School 2 (%)	School 3 (%)
house	58	43	23
tree	40	64	55
fence	9	28	9
people	28	23	23
vehicles	38	8	14
water	23	15	27
clouds	21	20	14
roads	32	23	14
sun	40	20	9

hills/mountains	23	8	14
wild animals	20	23	73
domestic animals	3	10	18
buildings	48	26	27
vegetation	23	33	27
windows	63	76	27
grass	31	38	14
household equipment	37	41	27
dirt	6	10	27

School 1, as might be expected from the urban school, had the greatest number of houses, buildings, vehicles and roads in the drawings. This group also had the most representations of the sun, and hills or mountains. Animals were limited in their drawings.

Surrounded by forest, School 2 had a higher percentage of trees in their pictures than the other schools. They also had considerably more fences, and more grass and vegetation. Schools 1 and 2 showed a much higher number of windows in the drawings, which is like to have been the influence of the book.

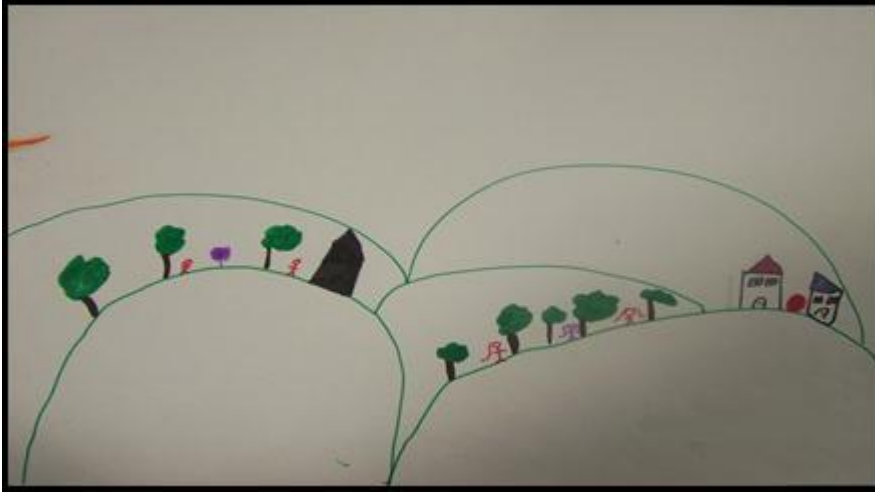
School 3, located in a drought stricken area, surprisingly showed more water than the other schools, possibly due to the community concerns about water affecting the children. There was a notable absence of windows, which was probably due to removal of the book for data collection. Animals, both wild and domestic, were much more strongly represented in these drawings than in the others. This might be due to prior study the class had done about bush animals, as reported by the teacher and some children. Dirt, rather than vegetation, was more prominent in this school.

Qualitative assessment

Qualitatively, drawings were examined for line, shape, colour and mood. Together with content, this gave insight into children's perceptions of their environment.

In general the students from School 1 used bright colours and drew lush environments. Illustration 1 (below) is an example.

Illustration 1 (by M.)



M. showed rounded hills and trees and geometric houses in this brightly-coloured drawing of her environment on the way to school. There are 5 people in the picture. M's story for this drawing was: *In the morning I wake up and go for a walk and go to school. I see trees and houses and flowers. I see hills.*

Illustration 2 (below) is a bright and lively picture of what W. saw literally from his classroom window. There is a strong use of red and blue, with geometric shapes of the church, swings and drinking fountain.

Illustration 2 (by W.)



W. told the following story: *This is the church and play area and the fountain where we drink and a ball and me.*

Children from School 2 also drew colourful pictures, using organic lines and shapes combined with some geometric forms, such as in Illustrations 3 and 4 below.

Illustration 3 (by C.)



Using bold colours of green, yellow red and blue, the angular form of the window sits in contrast to the organic natural forms. C. said of the drawing: *I can see birds and cockatoos, a window and a sun. Yes, flowers, we have lots.*

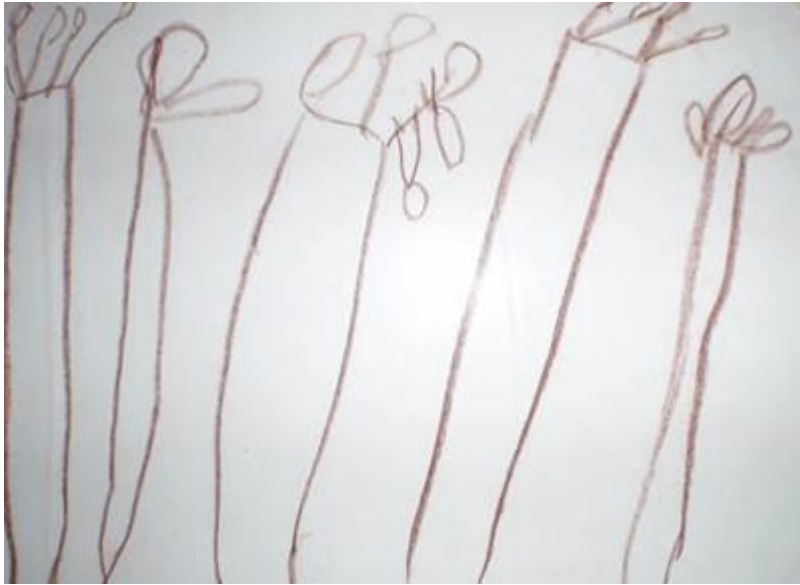
Illustration 4 (by B.)



This drawing shows bright green organic lines with more angular, black tree trunks. The blue turning into black is a road. The mood is cheerful, enhanced by the birds in the tree and sky. ... said, *We have lots of trees with spiky leaves. This is exactly what it looks like. It's a passionfruit tree and some fall down, and there are bushes and flowers.*

The drawings in School 3 were somewhat different, as children were able to use classroom materials as well as those provided by the researchers, and stories were required for each drawing. While most showed a positive view of the environment, demonstrated through colour and line and shape use, there seemed to be more variety and depth in what was represented. This could be due to working from imagination rather than a story, having had previous study about the environment, and requiring children to tell a story about their drawings. Illustrations 5 and 6 below, along with their stories, show depth of understanding about the environment.

Illustration 5 (by D.)



Monochromatic, this drawing has linear trees and rounded leaves and bats. D's story was: *These are the bats hanging in the trees. When we went there we had some lunch and we saw some bush turkeys. When we left they hopped on the tables and ate all of the scraps that we left behind.*

Illustration 6 (by L.)



While mainly a pencil drawing with one splash of colour on the bush turkey, this drawing is rich with detail. L's story is: *This is my house and this is the turkey trap that I made. That is me pulling the string. Inside the trap we put fruit. The turkey has a nest and it is full of leaves*

and insects and pooh. My brother is riding his motor bike and that's my house and the dogs. That's my swimming pool and the trees too.

Themes from Findings

While research to date has focused mainly on testing methodologies, a number of issues became apparent in the data. These included that content reflected the location or environmental circumstances; content was influenced by materials presented prior to the data gathering, i.e. the book *Window*, and discussion about the environment; that often the world was looked at literally, and that personal agendas were present in some drawings.

Drawings often reflected geographic location or environmental circumstances. For example, water was a dominant theme in the drought-stricken area. Children living on the coast included elements of the sea in their drawings, such as Illustration 7 below.

Illustration 7 (by M.)



M.'s story was: *When I go to the beach sometimes I go diving. I look for creatures – moray eels, sharks, jellyfish and crocodiles.*

Content of some drawings was influenced by materials presented prior to the data gathering, such as the book *Window* and discussion about the environment, or prior classroom learning about bush animals. Illustrations 8 and 9 below are examples.

Illustration 8 (by F.)



Illustration 9 (by D.)



D's story was: *This is a possum in the tree. It has a long tail and claws. It has big eyes to see at night. It has big ears to hear with. It likes being in the tree. It finds fruit to eat there.*

A number of drawings portrayed literally what was seen from the window, such as Illustration 2 above, showing the church on the school grounds. Another example was

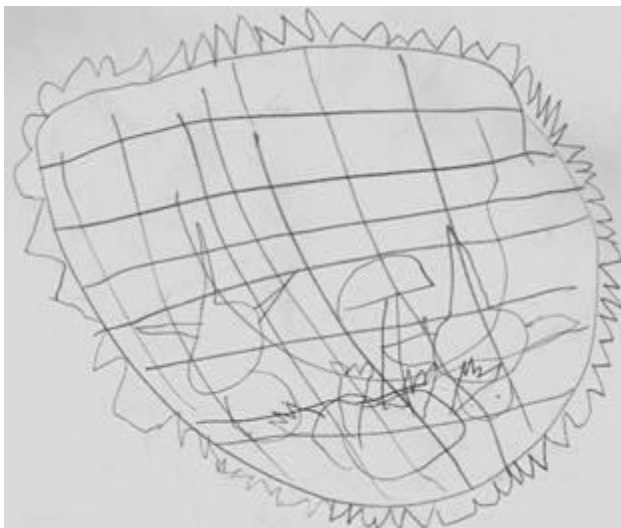
Illustration 10 below, a view from the child's bedroom window and Illustration 11, frogs in the school drain.

Illustration 10 (by A.)



A. drew literally what she saw from her window, but her story was: *I can imagine the neighbour's dog running around happily in the grass. They don't have trees or plants, but we do. But I didn't draw it because this is down the side and there are just rocks there.*

Illustration 11 (by J. – frogs in the school drain)



Issues other than what was seen in the child's environment were represented in a few drawings. We have called this "personal agenda" items. They include Thomas the Tank Engine, playing skeletons and dinosaurs. Illustration 12 (below) is of Thomas the Tank Engine.

Illustration 12 – Thomas the Tank Engine (by R.)



R's story was: *"Thomas [the Tank Engine]" has to go to the station.*

Conclusion

The children's drawings of their environment were overall quite positive, filled with organic lines and shapes, bright colours, plants and some animals. Most faces were smiling happily in the drawings, as children demonstrated a sense of comfort about and connection with the environment. This may be due to the areas in which they are living, which abound in good weather and tropical plants and animals.

The stories the children gave that were catalysed by the drawings enhanced the researchers' understanding of the drawings. Where the narratives were not included it was often difficult to discern what was in the drawings.

Children in this research showed an awareness of their environment and generally seemed to feel positive about it. The arts appeared to provide children with the tools to use to express their ideas, particularly in contexts such as with the visiting researchers/ tourists, where the drawings were essentially road maps for visitors to explore the local environment. But

storytelling, another arts form, enhanced the children's expression and researchers' understanding of their ideas.

If there are already positive feelings and connections with the natural environment, then learning how to sustain it should follow on easily. We plan to teach children about environmental sustainability, using an arts-based approach. We will include other arts areas, such as music, painting, sculpture, dance and improvisation as teaching and learning tools to supplement drawing, storytelling and role plays. We feel that the juncture between Art and Science can be a strong support for children's learning about Australia's ecosystems and their roles in environmental sustainability.

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