The Cool Cubby Project

August 2015

A Report of the Cool Cubbies Project-

A collaboration of Rous Water, Richmond Landcare Inc., Evans River K-12 School Green Team and supported by the Northern Rivers Environmental Trust

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Rous Water
REGIONAL WATER SUPPLY

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Acknowledgement is given to Barbara Jensen, the Rous Water Community Educator for her innovative work in developing and collaborating with the community to design and implement the Cool Cubbies Project. Barbara's leadership is educating children, staff and families continues to have impact in the catchment area of Rous Water. Her continued commitment to raising awareness around sustainable living practices for water is exemplary, and she is an outstanding leader in this field.

This independent evaluation provides evidence of the effectiveness of the Cool Cubbies, the Children's story book and Teacher's Handbook in raising awareness of sustainability practices within preschools, and through association, with families and the broader community. The educational and behavioural outcomes provide support for Rous Water's current community education activities, and an evidence base to encourage more preschools and early childhood services to adopt and embed sustainable practices within their settings.

The Cool Cubbies Project was organised through a collaboration of Rous Water, Richmond Landcare Inc., Evans River K-12 School Green Team and supported by the Northern Rivers Environmental Trust. The success of the Cool Cubbies Project is reflected in the strength of the local community partnerships. The Project greatly appreciates sponsorship from Newcastle Permanent Charitable Foundation, Richmond Landcare Inc. and Rous Water. As well there was financial and building support from Nickel Energy, Duraplas, Bunnings Warehouse, Xylosinuous Building & Design, Evans River K-12 School Green Team and Ballina High School building students. Thanks also go to the early childhood centres- the children, staff and families, for their keen participation in the Cool Cubbies Project. These centres were Lismore Parish Preschool, Lismore Community Preschool, Lennox Head Community Preschool, East Lismore Community Preschool, Lennox Head Community Preschool, Wollongbar Community Preschool and Evans Head Community Preschool.

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Executive Summary

The Cool Cubby Project: a sustainable cubby house

Playing in cubby houses is a long tradition of children. What is it about cubbies that is so attractive? And what happens when they are converted into a Cool Cubby- a sustainable cubby house? It is well documented that children learn best through play so making a cubby house sustainable, into a 'Cool Cubby', is an innovative approach to embedding sustainability into early childhood practices. This approach has the potential to trigger ongoing conversations and learning about sustainability, not just with the children who attend the centre but also the teachers, the families and the local community.

Therefore this report presents an evaluation of the project of turning cubby houses in a preschool playgrounds into Cool Cubbies with sustainable living components. The project aimed to raise awareness about sustainable living with young children, their teachers, families and community. The eight cubbies in the Cool Cubbies project were fitted with a solar panel and inside light; a water tank and guttering on the roof to catch the water; a vegetable and native garden; a weather vane; and a worm farm. These components addressed key areas of sustainability living in Australia, specifically biodiversity, water, waste, and energy in the early childhood educational settings. Thus Cool Cubbies were viewed as a tool for teaching sustainable living through engagement in play based learning within the cubby, and intentional interactive teaching between the teachers and children with the gardens, weather vane and worm farm.

The evaluation was undertaken in five of the eight early childhood settings where a Cool Cubby had been installed in the Rous Water supply area, the regional authority providing water to councils in the Northern Rivers of New South Wales. The evaluation and report was a research collaboration between Southern Cross University and Rous Water.

The Cool Cubby Project raised awareness about sustainable living with young children, their teachers, families and community. The Cool Cubbies Project is a key example of developing resources to support a more sustainable future through the act of creating a learning resource based on play-based learning that is grounded in sustainable initiatives for young children.

Background

Internationally the decade, 2005-2014, was dedicated to the United Nations Decade of Education for Sustainable Development (UNESCO, 2014). This initiative was designed to 'mobilize the educational resources of the world to help create a more sustainable future' (p.1). While educational resources for sustainability have been forthcoming in the primary and secondary schools, early childhood education (ECE) has been slow to implement sustainable practices (Davis & Elliott, 2009). However since 2009 significant innovations in Australia to promote sustainable practices in early childhood settings have been implemented as a result of governments around Australia signing up to an historic agreement for early childhood education.

Education for sustainability in Australia

Early childhood centres in Australia are increasing with more children needing to attend centres as a result of maternal employment (Boyd, 2013). Children are now spending many hours in child care centres prior to the commencement of formal schooling. Consequently early childhood centres have a significant role to play in building children's capabilities and understanding around sustainable development (Davis, 2010). Sustainable development is defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their needs' (World Commission on Environment and Development [WCED], 1987, p.87) and is viewed as dynamic, variable in contexts, and has environmental, social, economic and value dimensions (WCED,1987).

In 2009 the Coalition of Australian Governments agreed to implement a National Quality Agenda for early childhood education (Australian Children's Early Childhood Quality Authority [ACECQA], 2011). Based on evidence that children's early experiences impact significantly upon learning and development over the lifespan (Heckman, 2006) all Australian governments agreed to implement this National Quality Framework which includes the National Quality Standards (NQS) (ACECQA, 2011).

The National Quality Standards (NQS) requires early childhood educators take an active role in caring for the environment by supporting children to 'become environmentally responsible and show respect for the environment' (p. 107). Embedded within the NQS is Australia's first early childhood curriculum framework: the Early Years Learning Framework (EYLF) (DEEWR, 2009). The EYLF too, acknowledges the importance of early childhood education for sustainability in playing a key role within early childhood settings. The EYLF is

underpinned by practices that include a holistic approach to teaching and learning that 'focuses on connections to the natural world,…and educators (who) foster children's capacity to understand and respect the natural environment and the interdependence between people, plants, animals and the land' (p. 14).

It is vital that children are actively involved in learning about environmental and sustainability issues. Early awareness places children in good stead for their future actions for sustainability. This requires early childhood educators to behave as role models and to share knowledge about environmental issues and reflect on their educative role with children and families (Siraj-Blatchford, 2009). Educators have an important role to support and facilitate learning opportunities for children, especially in developing children's understanding of sustainable practices (Kultti & Pramling Samuelsson, 2014). Play is recognised as being a vehicle for learning for young children, and a cubby house, like other aspects of the learning environment provides a unique resource for children's play. A cubby house can be used for pretend play, where the children can play at being someone else- they can pretend to be mothers, fathers, scientists, builders, doctors, or whatever they desire, acting out roles that are meaningful to them. Play-based learning is regarded as one of the best ways for young children to learn, and supports all aspects of development- physically, cognitively, socially and emotionally. Research has shown that play is essential for developing personality, competencies, self-esteem and social awareness (Hoorn, Nourot, Scales & Alward, 2015); curiosity, creativity and children are empowered to make connections between past experiences and new learning (DEEWR, 2009). So the notion of a cubby house that has sustainable components, a Cool Cubby, where children engage in pretend play is an innovative and suitable pedagogical approach to the teaching of environmental awareness.

The Cool Cubbies Project

This report on the Cool Cubbies Project takes the position of valuing the environment for its own sake, in contrast to the anthropocentric perspective of valuing the environment for human enjoyment (Cutter-Mackenzie, Edwards, Moore & Boyd, 2014). When educators support children to care for the environment it demonstrates that environmental education is a 'legitimate societal concern' (Hart, 2003, p.18), and encourages children to be socially responsible (ACECQA, 2011). Additionally many studies have found that significant life experiences in childhood with educators who are powerful role models that support sustainability influences children's outlook on environmental education in later years- see for example Chawla, (1998) and Tanner, (1999).

When educators work with children in a play-based learning scenario the teacher's role can be considered to be a continuum from a) open-ended play: where the teacher sets up the environment, and then stands back encouraging the children to choose their play activities; b) modelled play: where the teacher models the play activity and then the children engage in the play; c) to purposefully framed play where the teacher interacts with the children, and intentionally engages children in talking about their play (Cutter-Mackenzie et al., 2014) Their research identified that this continuum is useful for children to learn about sustainability. The Cool Cubby is the tool to engage children in play- from open-ended play, where they make the decisions about the type of play, through to purposefully framed play, where educators provide an opportunity to explicitly teach environmental education. According to Rous Water's website on what is a Cool Cubby:

> *A Cool Cubby is the short and easy name for a sustainable cubby house. By adding sustainable living components (ie rainwater tank, solar panel, veggie garden, native plants, worm farm & weather station) to cubby houses of Community Preschools they will become 'Cool Cubbies' and demonstrate wise management and use of our key resources eg water, energy, waste & biodiversity. (2015)*

The guiding principles for early childhood educators in Australia encourage educators to engage in ongoing learning and reflective practice (DEEWR, 2009, p.13). When an educator is presented with a Cool Cubby what then is their reaction? The Cool Cubby is intended to present an opportunity for developing/increasing awareness about sustainability for children and all adults who see it, including families. Families are recognised as being children's first and foremost influential teachers (DEEWR, 2009, p. 12) then they should be well-informed about the early childhood program where their child attends, and understand the daily opportunities children have for learning, This is where the Cool Cubby presents opportunities for active engagement with families about play-based learning and sustainability. This study seeks to identify the impact the Cool Cubbies had on raising awareness about sustainable living with young children, their teachers, parents and community.

The Cool Cubbies project aimed to "raise awareness about sustainable living with young children, their teachers, parents and community" (Rous Water, 2015). The intention was that the Cool Cubby presents to the children, educators and families a "holistic picture of sustainable living; water saving, energy saving, food production, waste management and biodiversity support" (Rous Water, 2015). The explicit physical presence of the Cool Cubby, and its sustainable components aimed to demonstrate wise management and use of key

resources being water, energy, waste and biodiversity. The value of evaluating the effectiveness of the Cool Cubby, is that it may be a catalyst for shifting and/or engaging community attitudes, behaviours and actions for sustainable lifestyles.

The idea of a Cool Cubby was conceived and developed by the water community educator at Rous Water, Barbara Jensen, an experienced early childhood teacher and environmental educator. Rous Water is a leader for water education awareness. A quick browse of their website indicates the extent of programs available across early childhood, primary, secondary and tertiary educational sectors plus community engagement that are available. Within the early childhood programs there are four specific project initiatives:

1. The Cool Cubbies Project
2. The 5 Star Project
3. The Frog Hotel Project
4. The ongoing water awareness early childhood program (Rous Water, 2015)

The Cool Cubbies Project commenced when an idea came from a Preschool for water tanks for their cubby house. The water community educator, Barbara Jensen, built upon this idea, and sought assistance from local community groups to support a project that not only included a water tank but also other components of sustainability such as a solar panel and light. The Cool Cubbies Project was thus a collaboration of Rous Water, Richmond Landcare, Evans River K-12 School Green Team and supported by the Northern Rivers Environmental Trust. Sponsorship was given by Newcastle Permanent Charitable Foundation: $5,000; Richmond Landcare Inc, $4,000; and from Rous Water, $1,000. As well there was financial and building support from Duraplas, Bunnings, Nickel Energy and Xylosinuous building & design (Rous Water, 2015).

The water community educator invited preschools to participate in this project. To be able to participate early childhood centres needed to have a cubby house that could be converted to a Cool Cubby. Eight early childhood centres, seven community based not-for-profit preschools, and one children's centre at TAFE, volunteered to establish a Cool Cubby in their playgrounds. The Cool Cubbies Project added sustainable living components to a cubby including a rainwater tank, solar panel, veggie garden, native plants, worm farm and a weather station.

Photo 1. East Lismore Community Preschool's Worm farm and vegetable garden with Cool Cubby in background.

The idea of a Cool Cubby built upon research that Rous Water had conducted with Queensland University of Technology. This research had investigated the impact and potential of the water education program in early childhood settings, and identified that young children can be advocates for change for sustainable water use (Davis, Miller, Boyd & Gibson, 2008). Building on this finding, and that the National Quality Standards (ACECQA, 2011) suggests that educators can promote environmental education when they model respect, care and appreciation for the natural environment, share information with children about the environment, and human impact upon the environment, the concept of the Cool Cubby was conceived and implemented.

Methodology

The aim of this report was to evaluate the effectiveness of the Cool Cubbies Project against its goal of raising awareness about sustainable living with young children, their teachers, parents and community. The report provides an independent evaluation of the effectiveness of the Cool Cubbies Project, which included the Cool Cubby and its components and associated resources, to gauge the raising of awareness of sustainability practices within preschools, with families and the broader community. The project was evaluated from three data sources: first by talking with children and educators associated with the preschools about their understanding of the Cool Cubby. These conversations/interviews occurred three years after the installation of the Cool Cubby. This meant that the children who had been present during the installation of the Cool Cubby had moved onto Primary school, and some early childhood educators had also moved on. However this provided an opportunity to evaluate the impact of the Cool Cubby on the children who were present at the time of interviews.

Second the project was evaluated by reviewing the website of Rous Water that included teaching materials, and artefacts of media attention at the launch of some of the Cool Cubbies, photographs and children's artwork. To capture the impact of the installation of the Cool Cubby the material on the Rous Water website was analysed. This material shows the development of the Cool Cubby Project, children's and adults' responses to the Cool Cubby at the time of installations from 2011-2012; and media reports on the launching of the Cool Cubbies Project. Third each preschool completed a questionnaire on the effectiveness of their Cool Cubby. This questionnaire was designed by the initiator of the Cool Cubby for Rous Water and contributed to the evaluation of the Project.

The findings from this research will provide Rous Water with feedback on their educational programs, children's, staff and families awareness about sustainability, and the impact of the Cool Cubbies Project's beyond the grounds of the early childhood setting. It was also anticipated that the educational and behavioural outcomes outlined in the evaluation report will provide an evidence base which can encourage more preschools and early childhood services across Australia and beyond to adopt and embed sustainable practices within their settings.

Methods

Evaluation of the Cool Cubbies Project involved:

- Interviews at each preschool with a Cool Cubby. Altogether eight Cool Cubbies were installed in children's services. However only five of these services were available for interview. The educator, with the researcher present, talked with children based on the research questions, and the researcher interviewed the early childhood teachers. Each educator (including the Director) was interviewed separately, to provide an independent appraisal of the Cool Cubby within the preschool community about sustainability. The semi-structured interviews centred on the Cool Cubby and its seven components- solar panel and light, the worm farm, water tank, native garden, vegetable garden and weather station; how the Cool Cubby was used; a discussion about sustainability and the centre's policy for sustainability. For a copy of the questions please see Appendix 1. These conversations were recorded and transcribed.

- Interview with the Rous Water Community Educator, Barbara Jensen, to investigate her reasons for setting up the Cool Cubbies. For a copy of the questions please see Appendix 2.
- Review of material from the Rous Water website gathered at the time of the Cool Cubby installation.

Background Information of the five Preschools with Cool Cubbies

Five of the eight preschools that had Cool Cubbies were available for staff and children interviews. These included:

1. Alstonville Community Preschool is a not-for-profit community based preschool for 40 children per day aged three to five years funded by Department of Education and Communities, NSW. The preschool's vision is "to work in partnership with families to create a fun, stimulating and supportive learning environment where children can learn and explore through play." This preschool was in a church hall.

Photo 2. Alstonville Community Preschool Cool Cubby.

2. East Lismore Community Preschool is a 40 place per day not-for-profit community based preschool for children aged three to five years funded by Department of Education and Communities, NSW.

Photos 3. East Lismore Community Preschool's Cool Cubby including the vegetable garden, solar panel, worm farm and tank.

3. Evans Head Preschool Association is a not-for-profit community based preschool for 30 children per day aged three to five years funded by Department of Education and Communities, NSW. The purpose of the preschool "is to provide quality early childhood education, care and support for young children and their families". This preschool did not have a Cool Cubby prior to being informed of this project but they were keen to have a Cool Cubby when informed. So the preschool and the Evans River K-12 School Green Team local High School students, under the direction of Xylosinuous Building & Design, designed and built this Cool Cubby.

Photo 4. Evans Head Community Preschool Cool Cubby

4. Lennox Head Community Preschool is a 40 place per day not-for-profit community based preschool for children aged three to five years funded by Department of Education and Communities, NSW. It aims to "provide a stimulating program of activities for children…. (with an) approach to planning is child-centred, which means that programming is designed to build on each child's strengths and interests".

Photo 5a. Lennox Head Community Preschool Cool Cubby with tank, worm farm

Photo 5b. Lennox Head Community Preschool Cool Cubby with vegetable garden

4. Lismore Parish Centre Preschool is a community not-for-profit organisation with Management provided by both Church and Parent representatives and licensed by the Department of Education and Communities. The preschool caters for up to 29 children 3 to 5 years daily during school terms. The preschool philosophy includes a play based approach to learning: "From our belief that the *early years are a unique and valuable stage of life*, (not just a preparation for the later years of schooling and adulthood), play is the avenue through which learning and discovery is made". This preschool did not initially have a cubby, and they were keen to be part of this Project. So the Preschool purchased this cubby house so they could be part of the Cool Cubby Project.

Photo 6. Lismore Parish Centre Preschool Cool Cubby

Three other Cool Cubbies were built and installed that were not part of this evaluation. These were:

1. Wollongbar Community Preschool

This cubby was built by Ballina High School students with the assistance of the Preschool

Photo 7. Wollongbar Community Preschool Cool Cubby

2. Wollongbar TAFE Child Studies: At the Wollongbar TAFE the Child Studies section has a playgroup facility. They too had a cubby designed by Xylosinuous Building & Design, and built by Ballina High School Students.

Photo 8a. Wollongbar TAFE Child Studies Cool Cubby under construction

Photo 8b. Wollongbar TAFE Child Studies Cool Cubby complete

3. St Anne's Long Day Care Centre

St Anne's is a long day care centre catering for 75 children per day in Lennox Head NSW. They too had a cubby built so they could take advantage of having sustainable components included in their cubby. This was designed and built by Xavier College Students from the nearby secondary school.

Photo 9 .St Anne's Long Day Care Centre Cool Cubby

Ethics

Ethics Clearance was received from Southern Cross University prior to the conduct of the research. The research posed low-risk to the humans involved in the study. For the conduct of the interviews with staff Consent forms were signed by staff. Parents signed the child consent forms, and children gave their own assent to be part of the interview. Children were advised they could leave the group at any time. No children chose to leave the group during the conversations with the educator about the Cool Cubby.

Study Limitations

It is vital that children are actively involved in learning about environmental and sustainability issues. Early awareness places children in good stead for their future actions for sustainability. Of key importance is that the Cool Cubbies were installed in these preschools in 2011-2012, and interviews were not conducted until early 2014. Therefore the 'newness' of the Cool Cubby would have diminished, the children would have changed and moved onto Primary school, and the staff who were present at the exciting installation phase may be different as well. This can be viewed as a limitation and as a strength: the interviewed in 2014 were able to view the impact of the Cool Cubby three years on, and evaluations posted on Rous Water web site provides feedback from children, staff, parents and the community about the installation of the Cool Cubby at that time. This is discussed in the results.

Results

The data collected indicates that the Cool Cubbies Project raised awareness of sustainability in the early childhood communities. The directors, educators and children at each centre talked about sustainable practices they had adopted, and were being practised as a result of the presence of the Cool Cubby. These findings will be outlined in the following section which covers the interviews with the water community educator, directors, educators and children, and the resources on the Rous Water web site data that are publicly available about the Cool Cubbies Project.

Preschools were required to have their own cubby house so that the components could be added. Some early childhood settings who wanted to be involved and did not have a cubby house were able to work with local high school students who assisted with building a cubby, which was then transformed into a Cool Cubby by the addition of the components. A finding that indicates the significance of having a Cool Cubby is that early childhood centres who did not have a cubby at the time of the offer to turn their cubby into a Cool Cubby, combined with the local community, including high school students, and under the generous guidance of Xylosinuous Building & Design, built a cubby, and were able to be part of the project. Below are two photos of the Green team, the first of all the team, and the second of the team in action.

Photo 10a .The Green Team about to commence work on the Cool Cubby for Evans Head Community preschool.

Photo 10b .The Green Team working on the Evans Head Community Preschool Cool Cubby

Community Educator's Perspective

The Community Water Educator, Barbara Jensen was interviewed as part of this report. She explained that she was motivated to design and implement the Cool Cubbies Project because she had been so inspired by the commitment of the early childhood educators involved in her Water Education Program. The Rous Water Education Program was presented in early childhood settings, primary and secondary schools in the Rous Water catchment to educate children about the value of water. The Water Education Program had been evaluated in 2008, and demonstrated that young children can be advocates for change for sustainable water use (Davis, Miller, Boyd & Gibson, 2008).

Because her job only involves Water Education the Community Water Educator developed a team approach to develop the key components of the Cool Cubby beyond water management. Richmond Landcare were responsible for Biodiversity, Nickel Energy for energy including the solar panels, the North East Waste Forum (NEWF) for the management of waste which included the worm farm, and Rous Water for the tank, the weather station and vegetable garden.

The Community Water Educator recognised the need to integrate the Cool Cubby holistically by including all stakeholders of the preschool's community: the educators, children, and families. As she said

> *It's not just about handing out resources but it's about empowering the teachers and their modelling of sustainability that's important. I had learnt from my Water Education Program how powerful the empowerment of children was, and how achievable this was. People think little kids can't do anything. So I was keen on including the kids.*

The Community Water Educator knew that the cubby houses were a place of interest for children, and thus also for educators. To hoped to extend this to the parents through the use of the cubby house, and viewed the vegetable garden as a way for parents to be involved. She also included displays in the preschools for families to see what was happening in the preschool's yard: that is changing the cubby to a Cool Cubby. The Cool Cubby idea went beyond the preschool to local businesses who donated their goods and services to the Project. She felt that they were attracted to the project not only for sustainable reasons but because young children were involved who were regarded as 'a good selling point'. This involvement was surprising to Community Water Educator a she stated:

> *I got lots of support from businesses. This wasn't just about environmental education but about helping cute little preschoolers. The solar people were very happy to be in there amongst those young parents, and Bunnings donated garden materials.*

According to the Community Water Educator the interest in the program was very high at the time of implementation and launching the Cool Cubbies in 2011-2012. The media reported on the development of the Cool Cubbies in the local newspapers. Some three years later, at the time of

interview, the Community Water Educator views the eight Cool Cubbies as a demonstration program. While she created resources on Rous Water webpage for educators to extend their education about the sustainable practices evident in the Cool Cubbies she believes that it would have been better to have devised ways of ongoing education about the Cool Cubbies, and for further dissemination in the early childhood sector. The Community Water Educator recognised that when staff move from a centre then the centre is in danger of losing the impact of the Cool Cubby unless other staff members become educated about the cubby. That is the 'corporate knowledge' is lost to the centre.

> *The program should have had money for ongoing education as I don't follow through with children. I rely on the staff to educate the children. We need more money and time to change and this shouldn't be part of my job. We tried to get a network going between the preschools who had a Cool Cubby but that didn't work. It would be good if I could follow up by going to a staff meeting, and staff need ongoing support.*

Educators' Perspectives on sustainability

Seven educators were interviewed across the five preschools, and 20 preschool children. For the purpose of confidentiality the comments are de-identified and are labelled 'educator' or 'child'. At the commencement of each interview the educators were initially asked about their centre's sustainability practices. Educators indicated that their preschool had practices that included waste management by separation and recycling of rubbish; using recycled materials for craft and learning experiences; compost bin for food waste; encouraging litterless lunches and a worm farm; food production in the vegetable garden; chooks in the playground; practising water awareness by installing water tanks, inserting dual flush toilets and taps that stop automatically, and using tank water for outside water play so that children could engage with how much water there was. Each of these practices involved children's engagement and required educators to converse and engage in intentional teaching with the children. Intentional teaching involves teachers applying pedagogical approaches that align with the children's interests. For example by asking questions for the children to ponder when they show an interest in the solar panel, or engaging children in a discussion about where electricity comes from, or teach children sustainable water practices so that they understand why they are doing what they are doing, such as mulching the garden to reduce evaporation, and thus save water. The early childhood educators identified such practices in the interview discussions about the Cool Cubbies and these are highlighted in the following results.

Overview of the Cool Cubby

In the interviews all educators indicated that they were grateful for having a Cool Cubby in their playground as it assisted them to raise awareness about sustainability. The educators

talked about the play-based learning opportunities the Cool Cubby offered children and for raising awareness about sustainability.

> *That (the Cool Cubby) has been a fabulous thing, it has become the hub of their play... So it is mainly used as a house but it has also become an ice-cream shop, a bakery and fairy floss stand at the show and all kinds of things. (And) they have got right in front of them a light switch that turns the light on and we always talk to them "oh there's no electricity I wonder where that is coming from?" and then we go and look at the little panel up the top.*

The Cool Cubby was valued for its explicit presence which reminded not only the educators about sustainability but also the children:

> *Well I guess the importance is, that because it's in their environment constantly, and embedded in our practise here in the centre, that they take that with them out into the world home.*
>
> *So I think that as the whole thing, our understanding has grown with the program the centre knowledge, personally and as a staff.*

The Cool Cubby was recognised as being useful for raising water awareness as the water tank was filled from the guttering on the Cool Cubby's roof:

> *(it is) teaching a respect of water- harvested from the roof. So like with the water tank that's gone in, which we're very grateful for, they're learning to turn taps on and off. So they're learning to appreciate and respect water. Okay they're learning to use umm water that is given to us ...and not just turn on a tap and out comes the water so they're actually learning where water comes from. Okay so that we have gone through that whole cycle with them.*

The Cool Cubby was also valued for providing shade in the hot weather, and a space for children's community play.

The influence of the components of the Cool Cubby on learning

The areas of sustainability that were covered by the Cool Cubby and its components included water, waste, biodiversity and energy. Notes for teaching in these areas were provided by Rous Water (2015) on their website. The components added to the Cool Cubby that covered these areas of sustainability were a rainwater tank, weather vane and rain gauge (water); solar panel and light (energy); vegetable garden and a worm farm (biodiversity, water and waste); and a native plant garden (biodiversity). Educators provided examples of how they promoted awareness of sustainability by using the components of the Cool Cubby. These conversations about the components were viewed as a catalyst for learning- 'a trigger' as one educator described them:

Having components like the solar system on the roof and we've got a little tank on the side of it, the veggie garden, all of those things help because the children just automatically play there, so we can join them in their play and direct them towards sustainable thinking, so, it's the trigger I suppose.

The five preschools were all familiar with the Rous Water Aware Program having had the Community Water Educator come to their centres to deliver this educational program, so it was not surprising that educators talked about the benefits of the rain water tank.

With the water, the water is the main thing. Like I mean we used to just have use of the tap and now with the water tanks, it's made the kids more aware of "oh it hasn't rained, oh there's no water" so they're learning to respect for the water.

We've got the tank and because it's a little tank it always runs dry very fast, so that's really helpful (to learn) that water isn't endless, we actually have to value it and look after it, it's not an endless supply. We've got a rain gauge over there, so the children can see how much rain we've got, so that equates to what we get in the tank.

Photo 11. Looking for worms at East Lismore Community Preschool

Educators related their experiences with the children regarding solar energy, and compared it to the buildings in the community that have solar power:

The light as well is a very interesting talking point.... we talked about where does the light come from? And what's this and there's no electricity that goes up to the building. So where's the light coming from? How is it powered? What happens when we turn the light switch on and off, where does it get its power from?

But the fact that we've got the solar power is great and we are talking to the children now about putting solar on our roof, at the preschool, so it's flipped over now into becoming a more total approach.

The weather station was valued by the educators for talking with the children about the weather, as it included a wind vane, and a rain gauge. However in most centres the weather vane had broken and so was not being used:

when the wind vane was up there we used to talk about like some of the kids would be interested in watching it swivel and turn and stuff and they would say "oh why is that moving?" so then we were able to talk about wind and up here we get a lot of wind here in the winter time especially with the westerly blowing through that way. So they're able to watch their environment more like wind is measurable and it gives them the idea that things in the world are measurable.

Photo 12 .Weeding the vegetable garden at East Lismore Community Preschool.

The vegetable gardens were used extensively in each preschool with vegetables being harvested and shared amongst the preschool community. This practice undoubtedly raised awareness about the vegetable gardens with the families:

We make things out of the garden, like when we had a lot of basil, we made pesto and the children all take the recipe home. So we had one little girl took the recipe home and her dad went out and got all the things they needed to make pesto and they made it at home. So they are taking everything that they are learning here out home, talking to their families. And of course as they get older and go out into the community, hopefully it becomes their practise as well, that are sustainable.

Having the veggie gardens has been wonderful, we do lots of cooking, we've got the chooks up the back, so we have to sort our waste, not just into recycling but also into what the worm farm gets, into what the chooks get, yeah. So everybody gets something to eat.

In all preschools educators talked about how the children were engaged in separating their rubbish. Children sorted their rubbish into compostable; recyclable: such as paper and tins; and non-recyclable waste such as foil-like chip packets. The worm farm was viewed as being part of the recycling of the waste of the centre. However not all centres had success with the worm farm, and clearly needed education around how to keep this system functioning:

The understanding of the bin system and the recycling was really great for the children to learn because they are constantly reminding the staff about it now, as well as the worm farm and things like that. The understanding of the worm farm wasn't that great because we killed all the worms somehow.

The native garden proved problematic for some of the preschools to maintain and keep alive, while one preschool had extended this garden to include the heath plants from preschool's locality:

Oh, yes, we've got a lot of the local native plants in our garden. So we've tried to keep it to plants that are from this area, we've got a few things from other places, but most are coastal species from here, yeah.

Ongoing learning about sustainability for educators and children

The Cool Cubby was regarded as an excellent starting point for raising awareness about sustainability and ensuring the preschool met the requirements of the National Quality Standards (ACECQA, 2011). The educators were aware that each new group of children needed to be informed about the Cool Cubby's components. This was viewed as the educators' responsibility to intentionally teach about this and bring it to the children's attention. There was a view espoused by some educators that having the Cool Cubby was sufficient to raise awareness about sustainability:

Well I think that if you have the components you have pretty much covered the areas in which you can enhance sustainability in the children's lives and your own lives.

But the physical presence of the Cool Cubby with its components alone, was viewed by two centres as being insufficient to ensure awareness was raised about sustainability. Children changed as did educators, and so ongoing learning about the Cool Cubby was essential.

> *So obviously these children weren't the children who were here when the cubby first was put in. But, because the resources have helped us, just completely... continue really, everything that goes on in terms of sustainability.*

> *.. it has made the children a lot more aware about sustainability, mainly recycling and the water usage too. It has made them really aware about using the tank water than the tap water.*

The idea that the presence of the Cool Cubby influenced the educators to think about and raise awareness of sustainability was a common theme arising from the interviews.

> *I have to keep reminding our educators to keep using it that way and keep including it in their intentional teaching. Because it can just become another cubby where they let the kids go because they are happy to go there.*

In some centres educators encouraged children to illustrate the Cool Cubby thus enacting what Loris Malaguzzi (1993) termed 'the hundred languages of children'. The hundred languages is linked to the idea that children have a multitude of ways of expressing themselves, and in each form of their language expression they are learning and experiencing the world. Photo 14 of the children's drawing from East Lismore below is an example of how the Cool Cubby was expressed in this manner.

Photo 13 .East Lismore Community Preschool children's drawings of the Cool Cubby

Understanding sustainability

The seven educators who were interviewed all talked about the importance of sustainability. It was clear that all educators were conscious of the need to teach children about sustainability. They viewed it as being a part of living in modern society. The following quotes are from the educators in the centres.

> *Well it's extremely important we live in a world of shrinking resources and global warming and the more that that they can do as individuals as they grow up to support sustainable practices is just crucial. I mean I know I grew up in the 50's and no one ever cared about where the rubbish went. It just all went in together and out it went to the tip and umm nothing sustainable about anything, everything was throw away.*

The small practices that children are taught contributes to lifelong habits of acting sustainability, and one educator gave an example of how this was practiced in their preschool:

> *When we do our hand washing as well we are always talking about "one squirt of soap" "one paper towel". We are constantly discussing why and the impact of that on the future not*

necessarily just with us. We try and implement it in our everyday interactions with all of the children and what we program for them.

Two of the five preschools had a written policy on sustainable practices to guide their teaching, while one of these centres also incorporated sustainability into their philosophical approach to their teaching and learning.

Well our philosophy is based around sustainability and the final line in our philosophy says 'together we make the world a better place'. So, that's what we're always doing with our children, talking about 'how can we do it better'? Realising that they are actually quite competent learners and they have input and they understand a lot of the problems, so, yeah it just helps having all this stuff sitting here… If our lunch wrappers blow away or something, the kids know that the sea turtles might eat them. So there's lots of stuff happening around that's sustainability, all the time.

In addition educators were aware that being aware of practising sustainability involved ongoing professional learning about everyday life, and encouraging all educators who work with young children to be well informed about sustainable practices. As one educator stated:

It is quite important with the children, especially with the world being such a throwaway society these days. I think that sustainability isn't just about recycling and water, it is about being aware of everything that we do in everyday life and how that affects the future. I think that that is probably the understanding that the staff has now more so. That it isn't just those things that are on the surface, it's all of the underlying things that we do every day that supports that idea of sustainability, which is thinking and caring for the future not necessarily the here and now.

Data from the evaluations at the time of implementation

Feedback on the questionnaires from the early childhood settings at the time of installation indicated that the centres felt that the resource of the Cool Cubby and its components assisted the teaching of "sustainable living in an authentic play-based curriculum" as it had direct links to the early year's curriculum framework, the EYLF (DEEWR, 2009), and the NQS (ACECQA, 2011). The Cool Cubby had raised awareness of teaching possibilities for the staff, and the best part of the project was identified as "encouraging us (staff) to look carefully at our sustainability practices and educational experiences". One educator noted:

Play-based materials mean that children are automatically drawn into learning about their environment. We can then use intentional teaching to scaffold onto play to ensure rich and deep learning takes place.

Another educator stated:

> *Early childhood experiences for children help shape the ideas they carry for the duration of their lives. Early childhood teachers have a responsibility to engage and empower young children to care for the environment to ensure positive outcomes for the future.*

Feedback form parents indicated that some parents focused on the Cool Cubby to motivate play-based learning, whereas others understood how the key components raised awareness on sustainability. Educators reported using the Cool Cubby to explain sustainability practices to parents, thus the Cool Cubby assisted raising awareness of sustainability. The resources that were provided with the Cool Cubby not only provided staff with opportunities to enhance children's learning but educators used them as conversation starters with parents.

Overall it is clear from the interviews with the seven educators, and the feedback from the questionnaire at the time of installation that the Cool Cubby had a significant impact upon raising awareness of sustainability for children, educators and parents. So what then did the children say about their Cool Cubby? The following section presents findings from the children's conversations.

The children's perspectives of the Cool Cubby and sustainability

The children reported playing in the Cool Cubby using it as a house, a police station, fire station, fairy land, for cooking cakes, café, reading stories and playing with Lego. They were all aware of the presence of the solar panel and understood the connection to the sun for making electricity for the connecting light, although at one preschool the light no longer functioned.

> ***Educator-*** *What's the solar panel do?*
>
> ***Child-*** *It goes up on a side of the roof and the sun goes in it to make the light work.*

The children were familiar with the water tank, and how it provided water for the children for the garden, and playing. The water was harvested from the roof, guttering and connecting pipe. Children could link the water tank to saving water:

> ***Child-*** *Because you don't waste all the water and you just get the water that's from the rain.*

The idea of storing water was understood by the children, which had probably been introduced to them via the Water Aware Program delivered by Community Water Educator. The children made links to the tank with respect to the vegetable gardens in the preschool, using water for a bushfire, drinking water and even related it to the three little pigs' story:

Educator: *So if you've got the veggie garden, the native garden and the tank why do you think these are important at preschool? Why do you think you have them at your preschool?*

Child - *The tank gives you water and the veggie garden gives you food.*

Child - *The water tank gives you water to drink.*

Educator: - *So why do you think they are important?*

Child - *If you don't get much water you might get a headache.*

Educator - *Well yes that's very true.*

Child - *I had one yesterday.*

Educator: - *But what's important about a water tank?*

Child - *To save water and it will be handy for a bush fire.*

Child - *We learnt that from the three little pigs didn't we?*

There was discussion around whether the water could be drunk owing to presence of algae. As the educator indicated this was due to the tank being plastic, and so regarded as unsuitable for drinking water:

Educator - *But what do we use the water for?*

Child - *The garden*

Child - *And for drinking…*

Child - *you don't drink it.*

Child - *you can't drink it because there's algae in there.*

Child - *What's algae?*

Educator – *yes, what's algae?*

Child - *Like tadpoles.*

Educator - *Well, don't think we have tadpoles in there, it's just because it's plastic and it's in the sun so the algae grow in it.*

The vegetable gardens were a source of great pride in the preschools. Educators talked about the growing of foods that were then harvested and eaten. Children linked vegetables to healthy eating demonstrating understanding of how different foods affect health and well-being:

Educator - *So why do you think it's important that you have a vegetable garden at preschool?*

Child -*Because you can eat.*

Educator - *So we have yummy healthy things to eat.*

The practice of involving the families in the vegetable gardens was evident particularly regarding selling the vegetables for consumption at home. This practice reinforced children's understanding of the use of the water tank, growing the vegetables and made valid links between home and the centre. In addition it made the children aware of weeding the gardens:

Educator *- But when we've had a lot of veggies what have we do with them?*

Child *- We pull them out.*

Educator *- What do we do with them? We take them inside and…?*

Child *- cook them.*

Child *- and Sell them.*

Educator *- Yes we sell them to the mums and dads.*

Child *- And remember the time there were lots of weeds*

Educator *- Yes we've had a big blitz on the weeds*

Children demonstrated how worms are fed food scraps which in turn assist with growing vegetables:

Educator *- Is there anything we do at lunch time to help look after our world?*

Child *- I know, we feed the plants.*

Educator *- We feed the plants, how do we feed the plants?*

Child *- with the food scraps.*

Educator *-what do we do with the food scraps?*

Child *- Worms.*

Educator *- we give it to the worms and then what do the worms give us?*

Child *- Worm juice.*

Educator *- Worm juice – and where does the worm juice go?*

Child *- To the plants.*

Child *- Umm and we can look after our world if the gardens on our houses don't just go into the dirt and so that's how we get more water is we stop that happening.*

Children were unaware of the native gardens in their centres, which were one of the components of the Cool Cubby. When the children were asked about native gardens there was no response. In one

preschool the educator talked about native gardens with respect to birds however there was little understanding of how this could be linked to the concept of biodiversity, and sustainability:

> ***Educator-*** *You've also got something called a native garden, look at this; it's got things like this in it. These birds from Australia eat from it. Why do you think it's important to have a native garden?*
>
> ***Child -*** *So the birds can come and see the bushes.*

Sustainability practices

With regards to children's understanding of sustainability practices while all children articulated practices regarding saving water some children talked about sustainability practices that were emergent from the concept of the Cool Cubby. There was discussion around recycling and separation of rubbish. :

> ***Educator*** *– have a think about what we do at the end of our lunch. Where does our rubbish go?*
>
> ***Children*** *– in the bin.*
>
> ***Educator*** *– What sort of bins do we have?*
>
> ***Child*** *– The paper bin and the worm bin and the round bin.*
>
> ***Educator*** *– and the round bin which is where all the rest of the rubbish gets put isn't it. Three bins – What are your bins used for at home?*
>
> ***Child -*** *Garbage man.*
>
> ***Child -*** *Actually I have three bins*
>
> ***Educator*** *– Yes. So one is recycling, one is for worms and the paper goes in the recycling too. There is one more bin that we haven't talked about. It is the same as our round bin.*
>
> ***Child*** *– It's the normal bin.*
>
> ***Educator*** *– It's the normal bin. It's all of the other rubbish that can't be recycled, that can't decompose.*
>
> ***Child*** *– And the square one is the recycling one.*
>
> ***Educator*** *– Is it? Are they different colours?*
>
> ***Child****– Yes. The recycling one is different.*
>
> ***Child*** *– Mine's different colours.*
>
> ***Educator -*** *So when we use three different bins at preschool what is that teaching us for home? So what are we learning by using different bins at preschool?*
>
> ***Child*** *– Not to drop rubbish on the ground.*

At another preschool the children articulated understanding that rubbish can end up in waterways and harm animals:

Educator – *Okay, I want you to think about ways in how we look after our world? How do we look after the things that are given to us in this world?*

Child – *We keep them healthy.*

Child – *We have to look after the world.*

Educator – *Right how do we do that?*

Child– *We have to pick up something that's really yucky and put it in the bin.*

Child– *But not pick it up and eat it.*

Child– *Don't put rubbish in the water.*

Educator – *No that's right we don't put rubbish in the water.*

Child– *Fish might eat it.*

Child– *Or sharks.*

Child – *If you put it in the water, you might make the animals in the water sick.*

Child– *A dolphin might go up and when it's coming down it might eat it.*

Child– *And pelicans can too.*

Child – *They can get rubbish.*

Educator – *Oh my goodness! So how can we stop the pelicans from getting rubbish in their bellies?*

Child – *By cleaning up and save the world.*

Across the five preschools children talked about looking after their world by planting trees to make oxygen

Educator *–So when we think about all of these things and what they are teaching us, think of an idea of how we can look after our world. What are some of the things we can do to take care of our world?*

Child *– Plant trees.*

Educator *– Why do we need trees?*

Child *– For clean air.*

Educator *– And what do the trees give us?*

Children *– Air.*

Educator *– They give us oxygen. So that's why we need trees.*

Children talked about using bikes, scooters, skateboards, instead of cars to reduce pollution after being asked by the educator how else we can look after the world:

Child *– Not to make any pollution with cars.*

Educator *– That's a lovely one isn't it. So what could we do other than use cars?*

Child– *Umm by bus.*

Child – *Bikes.*

Educator – *Riding our bikes.*

Child – *Riding our scooters.*

Educator – *Riding our Scooters. This is all ways to get us healthy and help our world.*

Child – *Roller Skates.*

Child – *Using our Skate boards.*

In summary the children understood a lot about sustainability including water storage and usage, gardening, managing rubbish, and actions that can be taken to ensure the world is cared for. Their responses noted here indicate how they had made meaning about caring for the world, and applied it to their own worlds. They had brought their world into this understanding via their bikes, scooters and skate boards.

Evidence from the Rous Water website

As the launch of the Cool Cubbies occurred throughout 2011 and 2012, there was a need to review the material available to identify the impact the Cool Cubbies Project had on the community at that time. On the Rous Water website there are photos, media reports, and information about the opening of the Cool Cubbies, and the construction of the Evans Head Preschool's cubby taken from 2011 when the Cool Cubbies projects were launched. It is clear that there were a large number of people from across each preschool's community engaged in some way with the Cool Cubbies Project. The community included the preschool community of children, families and educators; the Rous Community Water educator, Richmond Landcare, high school students, TAFE students and educators, and even local politicians such as Jenny Dowell, the Mayor of Lismore City Council. With so many people from so many different areas of the community involved the project Richmond Landcare project officer, at the launch of a Cool Cubby, stated that

> "Initial feedback has been terrific and word has spread beyond the region".

On the Rous Water website documentation from Fox Street Preschool states that the children were asked "If we had a cool cubby what would it look like and what it would have in it?" In response to this question children drew pictures of Cool Cubbies and responded by stating that there would be a slippery dip, climbing frame, toys and pets. Other children focused on the tools to build it, and some children focused on the sustainable nature of the Cool Cubby including the water catchment, the vegetable garden and solar power from the sun to make electricity - see Photo 15.

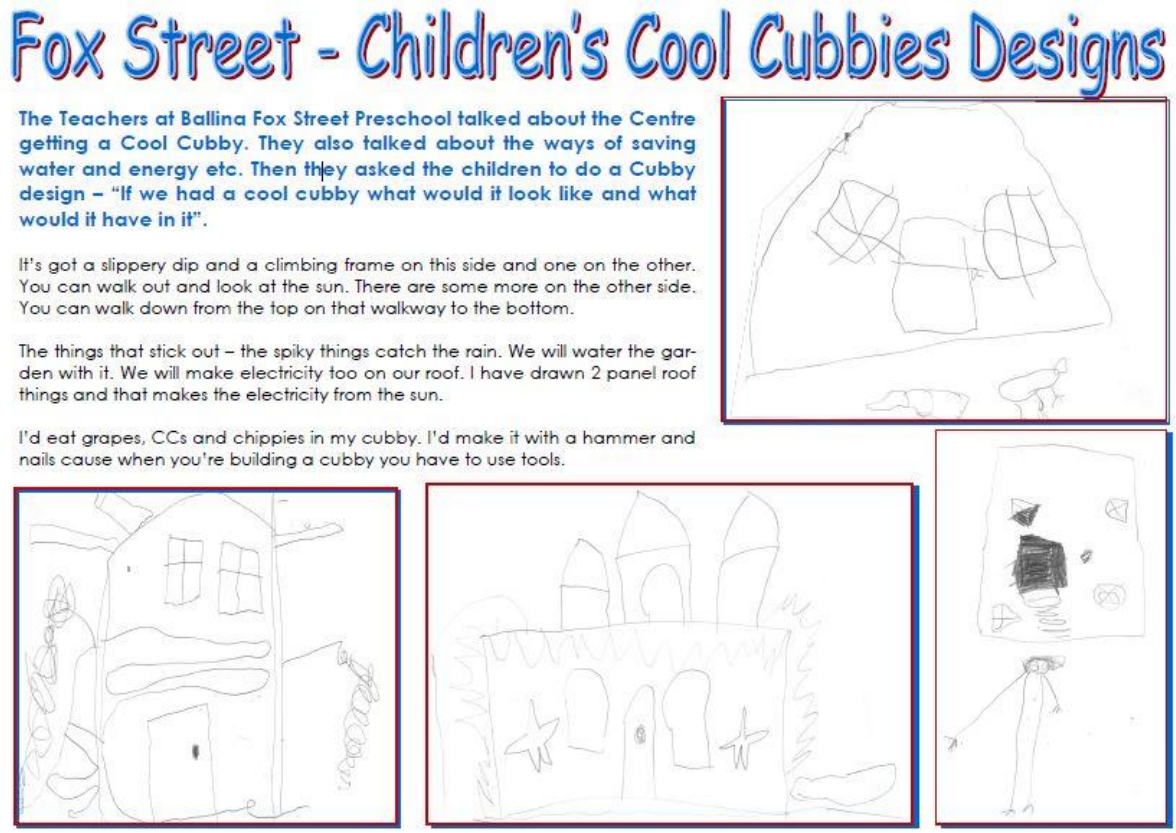

Photo 14. Fox Street Community Preschool Children's Cool Cubby designs.

The Cool Cubbies Photo Gallery shows children engaged with the Cool Cubby and its sustainable components measuring rainfall, handling worms, using the solar powered light, shovelling dirt and mulching the vegetable garden. Media coverage of the opening event at East Lismore Community Preschool of Cool Cubbies shows the community's interest in the project, one in particular that captured attention with a headline "World's Coolest Cubby"!

Photo 15a. Launch of East Lismore Community Preschool Cool Cubby

Photo 15b. Launch of East Lismore Community Preschool Cool Cubby

The Cool Cubby Project included an education pack for the early childhood centres that included a children's picture story book, a Teacher's Handbook, Sustainability element icon cards and other educational materials. The Cool Cubbies Project Teacher's Handbook includes general information about environmental sustainability and how to implement this into the programs and daily practices of early childhood services. The four information sheets included one for each sustainability component:

- Water Teaching notes
- Waste Teaching notes
- Biodiversity Teaching notes
- Energy Teaching notes (Rous Water, 2015).

In the initial 12 months a Cool Cubbies diary was provided for preschools to evaluate the project. It was kept by the staff, with photographs and comments about the construction, use and play. Excerpts from these diaries can be found on the Rous Water web site, and are part of the evaluation used in this report. More information about this project can be found at the Rous Water educators' website at http://www.rouswater.nsw.gov.au/cp_themes/default/page.asp?p=DOC-MGT-52-67-70

Discussion

The Cool Cubbies Project is a key example of a play-based practice within an early childhood setting that raises awareness to support a more sustainable future. By creating a learning resource that is grounded in sustainable initiatives, and that young children play with, the Cool Cubbies demonstrate how to embed sustainable practices within early childhood settings. For children cubby houses represented their homes. Incorporating components of sustainability that can also be embedded in homes has the potential to influence children's learning and understanding about their practices. In addition the Cool Cubby provides a cascade effect for learning (Davis, 2005) as the learning goes beyond the children to educators, families and the wider community become familiar with the idea of sustainability, and children learning about sustainability.

The Cool Cubby Project clearly educated children about sustainability, and associated practices. Children were familiar with the components of their Cool Cubby including the solar panel and that energy is harnessed from the sun to 'make the light work'. They were familiar with storage and usage of the water tank, growing vegetables, sustainable practices, and how to care for the earth. The Cool Cubby provided children with the opportunity to engage with explicit sustainable resources, and raise awareness about sustainability.

The Cool Cubby acted as a catalyst for embedding sustainability early childhood centres. Educators indicated how they talked with the children about solar energy, and water awareness. Two educators indicated that having the Cool Cubby was enough to indicate that they practised sustainability. For children's learning about sustainability there also needs to be ongoing educator engagement in highlighting to children the possibilities the Cool Cubby and how it aligns with learning about sustainability. For educators to teach sustainability requires educators to behave as role models for sustainable actions, share knowledge and content with children about environmental issues, and reflect on their own professional educative role (Siraj-Blatchford, 2009). This was happening in two of the centres where sustainability was included in the preschools' philosophy, and there were policies on sustainability and how to practise it. In the other centres policies on sustainability were being developed, and educators indicated the presence of the Cool Cubby and waste separation was sufficient to educate the children about sustainability.

The Community Water Educator indicated that at the time of implementing the Cool Cubby project in 2011 the staff and children were very engaged in teaching sustainability. There were press releases, with the new components of the cubby. However the research data cited

in this report was collected three years after the Cool Cubbies were created, so the children who were asked about the Cool Cubby were different to those who had been in the preschool at the time of implementation. In some cases so were the educators. While the time between implementation and data collection is a limitation it is also a strength, as the impact of the Cool Cubbies as a tool for sustainability in play based learning lived on. The Cool Cubbies were a permanent fixture that could be played in either as a cubby house, or the components, such as the solar panel and light, could be purposefully incorporated into children's play by the children and /or educators. The Cool Cubby therefore extended the use of an 'ordinary' cubby to provide a significant dimension for learning about sustainability.

However as staff leave the employment of a preschool then the knowledge about the Cool Cubby and its sustainable components may be lost. In this way the Rous Water Community Educator indicated that the Cool Cubby project turned out to be only a demonstration model, not an ongoing opportunity for children to learn about sustainability. That said if new staff are knowledgeable and learn about sustainability, then the intent of the Cool Cubby Project within each centre will live on.

So how to ensure that this happens? Clearly the educational leadership of the early childhood setting needs to be activated so that sustainability practices are part of the centre's philosophy, and there are operational policies that all staff practice on sustainability. Policies in early childhood centres guide educators' practice, and provide a rationale for actions. All staff should be familiar with centre policies especially as 'policies support child care professionals to make informed decisions about their daily practices staff (National Childcare Accreditation Council [NCAC], 2009, p.6). Once policies are written then educators need to reflect on the questions that are raised in the Australian Children's Education and Care Quality Authority (ACECQA) about sustainability such as:

> *How do policies and practices promote children's understanding about their responsibility to care for the environment (day to day and for long-term sustainability) and promote the development of life skills, such as growing and preparing food, waste reduction and recycling?* (ACECQA, 2011, p.100)

Another way to ensure the Cool Cubby is used for play and raising awareness about sustainability practices is for the early childhood centre to have ongoing professional development about the Cool Cubby, and the components that represent sustainable practices. This professional development can be sourced from literature about sustainability in early childhood settings, attending conferences and having educators, such as the Rous Community

Educator attend staff meetings. At such meetings educators can learn about the components of the Cool Cubby and how to incorporate them into children's play, and reflect upon the questions posed by ACECQA (2011) about embedding sustainable practices in the centre. Follow up sessions with each early childhood centres that installed a Cool Cubby is highly advisable to maximise the investments made by such a broad section of the community. This would benefit not only the current children, educators and families but have lifelong outcomes for acting sustainably within the world.

Beyond the preschool it is up to universities and vocational training institutions to teach pre-service educators about the significance of sustainability, and how to embed it within early childhood programs. In this manner the change of staff in a centre will not affect the ongoing awareness of sustainable practice within an EC setting. To continually raise awareness of sustainability for children, families and staff the educators in early childhood centres need to continually embed practices that are sustainable within the learning program, and within the daily routine of the centre, flowing down from the centre philosophy and policies based on ACECQA's National Quality Standards (2011).

Conclusions and recommendations

The Cool Cubby and its components promoted awareness about sustainability in a number of ways. The teaching work of the early childhood educator was significant to raise awareness about sustainability living practices with the children. When the educator is familiar with sustainability concepts, and views stewardship of the environment as his/her role then they are likely to see the potential for learning about sustainability and the environment through the Cool Cubby and its components. All educators had a strong sense of water awareness and the need to use it wisely. If the educator is unaware of environmental sustainability then the Cool Cubby may act as a catalyst for learning about sustainability, prompting the educator to learn about the components attached to the Cool Cubby. For the child the Cool Cubby presents as a resource for play, and then with the educator posing questions it can act as a tool for learning about the environment. The child then shares their experiences at the preschool with their families, prompting family members to notice the preschool child's learning and interests.

This project's success also lies with the community engagement in the project. Multiple community members and businesses were involved in either the construction, the donation of materials, and/or attending the opening of the Cool Cubbies. The idea captured adults'

imaginations who embraced the idea and provided services and/or materials. The opening events were attended by the preschool communities, the donors of services/materials, local councillors and media, and were widely reported in the local media. Such involvement and reporting has the impact not only of promoting the preschool as a significant part of the community, but also of highlighting young children's engagement with sustainability awareness.

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Appendices

Appendix 1 Sample questions for open-ended interviews

Interview Educators

1. Can you talk about the sustainable practices you implement at this centre with the children?
2. Can you talk about the Cool Cubby's use at the centre? Has it been useful in assisting with sustainable practices? How?
3. Does it assist you to talk about sustainability with them?
4. What do you understand about the 7 components of the Cool Cubby?
5. Can you talk about the importance or not of this action with the children?'
6. Does your centre have a Sustainable practices policy (or Environmental education policy)? (Nomenclature may differ)

Interviews- possible conversations with children

1. Can each of you tell the researcher about the Cool Cubby? What's the solar panel do?
2. What else can you tell me about your Cool Cubby?
3. So you've told me some things about your cool cubby, can you tell me some more? What's in your cubby at the moment?
4. What's the cubby made of?
5. Can you tell us how water gets into the tank? What do we use the water for?
6. Can you tell me what kinds of things you play in the cubby? What sort of games?
7. So you told me you use the water to water the plants. What kind of plants were they? Did you have a special garden you used to grow things in? If you've got the veggie garden, the native garden and the tank why do you think these are important at preschool? Why do you think you have them at your preschool? Why do you think they are important?>**Researcher -** So why do you think they are important?
8. When we've had a lot of veggies what have we do with them? Is there anything else you use at preschool to look after the veggie garden?
9. So can you tell me, when you're learning about these things: water tanks, solar panels and learning to grow vegetables, are these some of the ways you can help look after your world? Does anyone know any other ways we can help our world?

Appendix 2: Questions for Community Educator Barbara Jensen

1. Can you talk about how the Cool Cubbies came about
2. What did you use to inform the program? Eg
    a. Policies?
    b. Theory?
    c. Principles? especially in relation to:
        - Understanding of water conservation
        - understanding of environmental education
        - understanding of early childhood education
3. Why did you choose to establish the Cool Cubbies in the manner you did- ie with children, staff and families?
4. What has been your overall experience of this program?
5. Is the program is having an impact? In what way?
6. Has there been anything that surprised you (consider both highlights and lowlights) regarding the program?
7. Now that the Cool Cubbies have been in place for two years is there anything you would like to change?
8. If you had the time and resources, how would you further develop the program?