TEACHERS@SUSTAINABILITY:

A Participatory Action Research Study in Place and Sustainability Education
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PROJECT REPORT
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Margaret Somerville
Director, Centre for Educational Research, UWS

Zhan Patterson
Co-ordinator, ‘Alive!’ Project, Hawkesbury Environment Network

Mark Edwards
Principal, Brewongle Environmental Education Centre
Authors
Margaret Somerville, Centre for Educational Research,
University of Western Sydney
Zhan Patterson, Hawkesbury Environment Network
Mark Edwards, Brewongle Environmental Education Centre

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INTRODUCTION

The Teachers@Sustainability project is a pilot study of professional learning, developed as a collaborative project between the Centre for Educational Research, University of Western Sydney, Brewongle Environmental Education Centre, Department of Education and Communities and the ‘Alive!’ project sponsored by the Hawkesbury Environment Network. The ‘Alive!’ project, funded through a NSW Environment Trust Grant, was designed to involve young people in environmental action.

This pilot study was conducted in relation to the ‘Alive!’ project, so the overall model of professional learning involved teachers and school students coming together in an initial conference to plan school-based sustainability activities and again at a final conference 12 months later to present an overview of their progress. The initial conference involved the teachers from the participating schools and girl guide groups and approximately 300 school students coming together at the Hawkesbury campus of UWS. The focus of this planning day was the education of the young people and the educators on a range of environmental issues by a variety of local presenters and workshop facilitators from the university and community. In addition, the aim was to inspire them with examples of environmental action currently underway and provide them with time to discuss and plan a project which would address a local environmental issue which was of importance to them. The final conference was held approximately 12 months later. This was an opportunity for the educators and young people involved to present back to the groups, through interactive workshops, the work they had undertaken in their environmental projects and to showcase their documentaries, which were made by the students of UWS School of Media and Communication Studies.

The Centre for Educational Research, University of Western Sydney, focuses on educational research for sustainable futures under the thematic programs of Globalisation, Sustainability and Equity. The Teachers@Sustainability project is located within the Sustainability program of research which has a key focus on teacher professional learning and teacher education for planetary sustainability.

Brewongle Environmental Education Centre (Brewongle EEC) is located in Sackville North and is situated in the former Sackville North Public School, with filtered views to the Hawkesbury River. As part of the NSW Department of Education and Communities the vision of the centre is to give support to schools to integrate sustainability education into all aspects of NSW school operations: curriculum, teaching and learning, physical surroundings and relationships with the local community. Brewongle EEC provides authentic contexts for exploring, investigating and understanding values, concepts and systems in the natural and built environments. It equips students to design solutions to identified sustainability problems. Brewongle EEC ensures an opportunity for all students to be highly engaged and interested in their learning in, about and for environmental sustainability. The centre focuses on the provision of authentic and engaging curriculum opportunities to support literacy and numeracy.

The Hawkesbury Environment Network (HEN) is a non-government, not-for-profit network of affiliated groups and individuals that work for environmental advocacy and action in the Hawkesbury region. HEN’s vision for the Hawkesbury region is for a sustainable future. Its mission is to conserve and restore the natural environment of the Hawkesbury region and to bring together people and organisations to increase awareness of and act for sustainability and the environment. Its vision as an organisation is to be a strong, viable, dynamic and
credible voice for the environment of the Hawkesbury and a network which is representative of the Hawkesbury communities through the engagement and education of its members.

**The ‘Alive!’ project**

Alive! is an environmental youth engagement project that is unique to the Hawkesbury region. It has provided an opportunity for young people aged 12–24 years to engage with their local youth groups, schools and community in taking action to address local environmental issues in innovative ways. Alive! engaged young people in the Hawkesbury region through empowering them to identify and address a particular local environmental issue. This project is innovative and unique, as the environmental issues that the young people worked on were identified by them. It is intended that, as a consequence of this method, young people will have ownership and develop solutions to the issue on both a long-term and short-term timeframe. Alive! was strongly underpinned by the development of networks, partnerships and relationships which have enabled the work developed through the project to continue.

Teachers and students from 12 schools (8 primary and 4 high schools) and one umbrella Girl Guide group (which encompassed four smaller Girl Guide groups) nominated to participate in the ‘Alive!’ project and each school and youth group identified a locally-based project that became the core of their environmental activities. In partnership with media and communication experts, students documented their activities using new digital technologies. Participating teachers identified a lack of knowledge and skills in the area of education for sustainability as a major hurdle and the precursor to this research. The training of sustainability literate teachers is identified as a key issue in implementing education for sustainability in schools and communities (Nolet, 2009; Skamp, 2010).

**THE TEACHERS@SUSTAINABILITY PILOT STUDY**

The project arose from Mark’s and Margaret’s conversations about what sort of professional learning support teachers might need in order to lead the school-based sustainability projects and what might be the issues for them in integrating sustainability education into the curriculum in their schools. Mark had suggested that the pressure of the ‘crowded curriculum’ and literacy testing in particular, were challenges that teachers who had come to other programs at Brewongle had raised with him. Zhan was interested in providing support for the teachers’ professional learning in the ‘Alive!’ project and documenting the process.

**Aims**

The Teachers@Sustainability Project aimed to:

- trial a process of participatory action research for teacher professional learning in place-based sustainability education
- document and evaluate the process of professional learning
- prepare a proposal for larger project funding based on this pilot study
Methodology

Place as conceptual framework
The study is framed within the concept of place, referring to the larger Hawkesbury region, to the places and communities in which the participating schools are located, and the buildings and grounds which provided the location of their projects. Through the methodology of participatory action research the study facilitated the incorporation of the teachers’ local school-based projects into the curriculum and pedagogies of education for sustainability.

Participatory Action Research
Participatory action research (PAR) seeks to understand the world by trying to change it, collaboratively and reflectively. Within a PAR process, ‘communities of inquiry and action evolve and address questions and issues that are significant for those who participate as co-researchers’ (Reason and Bradbury, 2008, p. 1). PAR practitioners make a concerted effort to integrate three basic aspects of their work: participation (life in society and democracy), action (engagement with experience and history), and research (soundness in thought and the growth of knowledge) (Chevalier and Buckles, 2013). ‘Action unites, organically, with research’ and collective processes of self-investigation (Rahman, 2008, p. 49).

Participatory action research functioned on several levels in this study. At the societal level, team leaders and teachers collectively participated in the participatory action research in a shared desire to address planetary issues by integrating environmental sustainability projects into the curriculum of schools and teachers’ professional learning.

Teachers from each of the 12 schools and the Girl Guides groups who took part in the ‘Alive!’ project were invited to take part in a participatory action research process to develop skills and knowledge in place-based sustainability education. Sixteen teachers and two Girl Guide youth workers† participated in three half day workshops facilitated by the project leaders, which were designed to scaffold their learning. In between workshops the participants’ ongoing school-based projects were facilitated by their online participation in the ‘Alive!’ website. Teachers reflected on their learning during the three half day workshops and their reflections, place-story maps, and scribed discussions were collected as data for analysis. The three research leaders explored the process of designing, conducting and evaluating the program of professional learning for the teachers. The team leaders audio-recorded their own ongoing cycles of action, observation and reflection in relation to workshop design and facilitation prior to and after each of the three workshops.

Action, observation, reflection cycles

Professional Learning Workshops

Workshop 1: Planning for Sustainability Education (see Appendix 1: Workshop 1 Program)
The first workshop program was designed to introduce teachers to the framework of Place as a way to connect their personal place attachments to their school-based sustainability projects. Using the framework of Place, teachers were asked to reflect on a number of

† We refer to the group of sixteen teachers and two Girl Guide youth workers as ‘teachers’ throughout this report for ease of reading but also in recognition of the teaching role of the Girl Guide youth workers.
questions in relation to their own identities in place, and to their projects, and to use this place framework as a way to introduce themselves and their projects to the group.

**My self, my place**
What is my place?
Who am I in this place?
What do I love about my place?
What am I passionate about in this place?

**My project, my place**
What is my project in this place?
Who is sharing this project with me?
How do I imagine our project will grow?
What will help it to grow?
What are its challenges?
What do I learn each day in our project?
How can I record that learning?

**My learning, my place**
What do I want to learn about place and sustainability education?
How do I want to learn about place and sustainability education?
What will help me to learn?
What will be challenging for me in this learning?
What do I learn each day in my place about place and sustainability education?

The teachers were invited to reflect on these questions by making a place-story map on A3 paper using coloured pencils and textas, and then using their place-story map to introduce themselves.

The second exercise in Workshop 1 introduced teachers to the idea of Sustainability, using a video about global sustainability issues, and they were invited to connect this to their own local school-based sustainability projects. They divided into small groups to workshop their projects and recorded the main points of these discussions on butchers’ paper to share with the whole group.

In the final session of Workshop 1 the teachers were introduced to the idea of ‘teachers as researchers’, reflecting on their own practice using simple digital technologies such as photography with iPhone, ‘go pro’ cameras for stills and video, podcasts, wiki spaces and blogs.

The leaders/facilitators recorded their post session reflections as part of the ongoing process of observation/action/reflection of the project.

**Workshop 2: Project Actions and Observations (see Appendix 2: Workshop 2 Program)**
The first session of Workshop 2, Reflection circle, was held in the setting of a eucalypt forest. Teachers sat in a ‘yarning’ circle to share the story of their environmental sustainability projects. The ‘yarning’ circle was utilised to allow participants to take time out from busy school schedules to share and critically reflect on their sustainability projects, questioning the process and making changes as required, such as embedding within the school community, budgets, timeframe and/or the use of outside agencies.
The second session, *Learning circle*, offered participants access to two powerpoint presentations about the implementation of sustainability education projects, pedagogies and curriculum in other schools. Teachers were then asked to discuss in small groups how these ideas might be applied in their own school-based projects.

The third session in Workshop 2, *Planning circle*, was designed to discuss the documentation and presentation of the professional learning through the teachers’ school-based projects. In this session the communication of school-based projects to the Hawkesbury community was discussed with the vision of building momentum for individual and community transformation.

The leaders/facilitators recorded post session reflections as part of the ongoing process of observation/action/reflection of the project.

**Workshop 3: Reflection and Evaluation, Next Steps (see Appendix 3: Workshop 3 Program)**

Workshop 3 began with a ‘reflection and evaluation circle’ held in a semi-circle on an escarpment facing the Hawkesbury River as it flows towards the sea. Participants spoke in turn, using the digital recorder as a message stick to reflect on their experience of the professional learning workshops.

The second session was designed for teachers to present their sustainability portfolios as a reflection on their sustainability teaching practice and its impact on students’ learning outcomes. It was decided to present the documentary produced by the University’s School of Media and Communications from the teachers’ video recordings of the schools’ place-based sustainability projects. Viewing the video provided the opportunity for teachers to celebrate their work in these projects and to see a completed product of the learning they had been involved in.

In the third session in Workshop 3 teachers formed small groups to discuss their work as sustainability educators, the constraints and opportunities presented by this project, the extent to which sustainability education was integrated into the curriculum as a result, and the possibility of teacher networks continuing the momentum generated by the project in the Hawkesbury.

A brief closing ritual was a means of celebrating the cycles of participatory action research learning for the teachers and research leaders.

The leaders/facilitators recorded post session reflections to complete the final cycle of observation/reflection/action of the project.

**TEACHER REFLECTIONS**

The data for the teachers’ cycles of participatory action research included:

- Seventeen place-story maps
- Teacher reflections on their individual school-based projects
- In-depth place-story recording of one school-based project
- Transcription of the digital recording of the reflection and evaluation circle from Workshop 3
Teacher evaluations

**Place-story maps**

The purpose of asking participants to draw a map of their places was to connect teachers to their own sense of place as an introductory framing of the whole process of professional learning. The place-story maps have been described according to the answers to the following questions to gain an overview of the maps as a whole body of data.

- What are the elements included in the picture (e.g. birds, gardens, houses, people, trees)?
- What is the dominant element? (Is there one, or more than one – determined by position on page, use of highlighting, bright colours etc.?)
- How are the elements connected (e.g. pathways, river course, footprints, other prints, or by other means of indicating movement)?

The five representative place-story maps described below have been chosen as they include tracks indicating movement and interrelationships between elements. Tracks were observed to be the single most dominant feature of the maps overall. The remaining place-story maps are included in Appendix 4, the first three of which also indicate movement and connection across the place-story map in the form of a path or road.

**Place-story Map #1**

There are five elements in this place-story map.

**Home:** In the top left corner of the page, the word “Home” is written, the illustration of which incorporates five trees, two houses, a set of concentric circles and a road. Blue, purple and green are used and the images are outlined sketches.

**Birthplace:** Directly opposite “Home”, in the top right corner, is the drawing of “Birthplace”, which is represented by six houses and a meeting circle. Outline sketching is again used, in purple, and the inside circle of the meeting image is overdrawn with yellow.

**Neighbourhood:** The third element is drawn at the bottom right corner of the page. On the outside is the symbol for people, enclosing houses and roads within. Although purple is the main colour used, other colours have been added on top of the purple to the semi circles.
enclosing the ‘Neighbourhood’. The word “Neighbourhood” is written above and below the image.

**My Walk:** Animal footprints and a line under cloud-like images, sketched in purple, are the images representing “My Walk” as the fourth special place for participant #8.

**School:** The somewhat smaller, fifth component of this place-story map is the school. It is represented, in the centre of the page, by two concentric circles with five semi-circles around the outside, possibly symbolising a meeting and greeting place.

Each of the five elements is drawn quite separately on the page, but they are connected by the colour purple and by the semi-circle images around concentric circles (the meeting places).

**Place-story Map #2**

![Place-story Map #2](image)

The dominant element in this place-story map is a series of short, differently coloured arrows (in two rows) indicating movement between five points. This begins at the top left where a large, yellow-gold M looks like a McDonalds icon but is also part of the text, St Marys. The first set of six green arrows then leads towards the centre of the page to wavy blue lines (water). On the other side of the water, six red arrows lead to a blue swirl and green grass clumps (wetlands?) drawn at the bottom of the page, slightly to the right. Eight orange arrows then lead up the page to an image, in the top right corner, which looks like a table with four chairs. Six blue arrows then lead from this point to the centre top of the page where mountains, clouds and birds are drawn. The circuit is then completed, from the mountains back to St Marys, by way of six red arrows.

There is no shading or coloured-in elements to this place-story but the images are clear and crisp. The movement is around the places in the story in the one direction.
This place-story map is told on the bottom half of the page, with only the sun in the top half of the page. The elements depicted are mountains, plains below, “MY PLACE”, footprints which lead to another location with many children and a second set which leads to another location to the north.

The focus of this place-story is “MY PLACE” at the bottom left of the drawing. Four people and a dog are drawn at the base of a big pink and red love heart. Below the love heart there is a brown roof (family home) and a large vegetable garden with rows of green, orange and red plants. There are four trees and another seven houses in this neighbourhood. Movement of the people to other houses in the neighbourhood is told of using blue arrows going into and around the homes and into the backyard of the main family home. There are small love hearts on each of the other seven houses in this area.

Large purple footprints then lead step by step across the bottom of the page to link to another location which has another pink and red love heart as its focus. There are ten children drawn here along with four homes behind the place where the children congregate. Broken blue lines around the love heart indicate movement within and around this area. The final smaller special place is defined by pink footprints which lead away from the child-focussed love heart to a group of homes further away (smaller images), and positioned on the green plains area.

The colours in this story map are vibrant as the images are fully coloured in. The bright yellow sun and the love hearts make this a very happy, active local place.
This place-story map is very vivid with colour and movement. There are two main sections to the map. On the left, there are the participants in this place. There is a possum, a dog, two chickens and a reference to Jill. She has drawn not only her name, but a backpack, hiking boots, gum leaves and gumnut blossoms, and colourful flowers. Movement is also defined for the dog and the chickens, whose footprints lead them off the page.

The second section of this special place is an almost square outline, three sides of which have dotted/dashed lines as the border. The drawing within this square is a bird’s eye view of the elements of this ‘yard’ and what is happening therein. Around the outside of the yard, starting at the bottom left, are two trees, one with red fruit/flowers and the other with yellow ones. A vegetable patch is in the bottom right corner, including green plants and the brown soil. Two blue swirls indicate water ponds or tanks along the right side fence, ending with an area for chickens at the top right. This is indicated by a roof and two nests with two eggs in each. The chickens’ footprints are in and around this area. At the top left is a large green oval shape with vertical stripes drawn on it. Another brown rectangle, drawn with a line dividing it in half and with green dots inside, appears to be another garden.

The very busy movement throughout this section of the map is indicated by four sets of footprints/shoeprints across and around all elements in the yard. The dog and chickens are also moving freely around this space, as indicated by their footprints throughout.
**Place-story Map #5**

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“MY SELF MY PLACE” is the title of this place-story map, written in capitals and underlined, in the centre top of the page. The elements included are two locations with trees and buildings (houses), one of which has a smiley face to the side, mountains, a river and tributary, a canoe and footprints throughout the place.

The story indicated by this map is movement (footprints) from a house/building at the centre top of the page, across the river, around and back over the river at a different crossing, returning to the home. There are mountains and a plateau on the right of the home (behind). A second set of footprints leads from the right of the house, crosses the tributary and connects to a canoe on the river, then continues in a loop back to the home it started from. The home is surrounded by trees and is positioned at the foot of the mountains.

The second home/building is in the centre bottom of the page and, like the home at the centre top, is surrounded by trees. On the left of this home/building is a huge smiley mouth and two eyes indicating a happy bright place.

The colours used throughout are ‘traditional’ with blue for the river and tributaries, brown and green for the trees and mountains and green/yellow scribble/shading for the plains below the mountains, around the rivers and continuing to the bottom of the page.

**Summary place-story maps**

The place-story maps were an important way to engage teachers in connecting to their local places and framing their experiences of professional learning. They reveal an important aspect of the ‘Alive!’ project – that the schools and Girl Guide groups taking part are connected through their location in the rural environments of the region, which are clearly valued by all participants. Many of the place-story maps show mountains in the background and the river in the foreground, which are characteristic of the landscapes. They also show a strong sense of connection between the participants’ home place and their places of work, with both often being shown with rural and gardening activities such as chickens and food gardens. Movement and connection are powerfully expressed in a number of maps by marking bird and animal tracks, human footprints, pathways and the river which flows through the region. Enabling participants to imagine and represent their places opens them to
other ways of telling their stories and locating their school-based projects in a broader socio-ecological framework.

**Teacher reflections on their individual school-based projects**

In the second workshop the teachers reported on how their sustainability projects were developing. There was great excitement as the audio-recorder was passed from one to another and they described seeing the manifestation of their plans in the activities of the children in their schools. The two extracts from teacher reflections chosen below are revealing of the ways that these projects send ripples out into other sustainability activities.

*Our project was an application for a water tank, which we’re integrating with other projects that we have happening. The group of students I’m working with called the Eco group, they’re just volunteers from all different year groups and we successfully applied for the grants to purchase that. We got a very good deal by networking with people that are connected with the school. And that has now been installed. We have a pump connected to it and plumbed and wired in ready to go. We just need some rain now. So we’re talking to the appropriate people about that [laughing].*

*So the project has been really successful because we have accomplished that and we are now building an associated garden with the tank, in a really central part of the school, which is just drawing in a lot of attention from other people. We’ve managed to integrate that with our efforts to reduce rubbish and it’s like composting and things like that. So there’s much more conversation around the school because people see this project happening and hopefully when we build a permaculture garden attached to the tank we’ll get some really cool things happening there. There’ll be a lot of people involved in the dialogue across the school. And on Monday I’m actually booked in to talk to the staff about what we’re doing and to see if it can be integrated further throughout the school and please help because I’ve just – I’m getting more and more kids joining my group and have got thousands of ideas and so many willing workers, and just not enough hours in the day to manage that.*

This story about a project in a secondary school reveals the ways that a single initiative, such as installing a water tank to harvest rainwater, grows to include designing and planting a permaculture garden and associated activities such as reducing waste by composting. The activities involve students from different year groups and networking with local businesses to supply their needs. At the time of Workshop 2, the teacher is overwhelmed by the number of children who want to join the group and is planning to enlist more teachers to assist and to integrate the activities further into the school. Time is identified as an issue.

A second detailed story, from a primary school, gives further insight into the ways that school-based projects develop.

*So we planted those prior to the holidays and they’re now ready for the harvest. Today – this morning Year 5 have planted tomatoes, celery, strawberries, rockmelon and Year 1 today have planted corn, carrots and lettuce. Now they were in an original bed that had been there in the past so they’re going to take over that. I have some Year 6 ‘guardians’ who’ll be helping them look after that. They will then take on board some of the Year 5 kids, who will then take it on next year. So they become like guardians for the year.*
We have a new garden going in next week, which we’ve purchased, which is just another one of those tank ones, above ground and that will be the Year 4 garden. Year 3 are going to be taking on hanging baskets of strawberries, tomatoes and then Kindergarten are doing seedlings in the greenhouse at the back of their building. Because of our school ground is quite small, we don’t put a lot in the centre, which would have been perfect for children to be interested, but we just don’t have the playground to do that. So we’ve placed it in places where kids can access with some supervision. It’s not going to be somewhere that’s going to be treated like a dumping ground, hopefully. What will happen in the long run will be the children will take responsibility for that from the class. So next year the upcoming Year 4 will then take on that garden. So they’re not all taking on a vegetable garden or a herb garden. We’ve placed it in strategic places so that the next group coming up take an interest. So the children who were planting plants, or like the vegetables this term, next year will take on something different, and then so on.

The only other thing that we’re taking on board is, I don’t know if many of you know that we have about seven groups in Year 6 that will then soon pass on their knowledge, and pass on those jobs to the children coming up, and we had our media group take the photos today. The Emu Group of kids go around picking up the large bits of rubbish. We also have our foods bins, our scrap bins which go in the compost and they go out every day now, and with the staff, which was discussed at our last staff meeting, the staff will now take on a bin each, so each grade will take on their own compost areas. So it’s integrated slowly through the school. How it’s integrating into curriculum is a little bit, still on the infant side of discussions. I think what it has done is, it’s sort of like, has started with Year 6, they’ve become quite excited, Year 5 have said ‘We want to do that too’. They’ve become excited, and it’s sort of grown from kids up. So hopefully that will then involve a lot of the parents now, and certainly the staff are very interested, but still in the infancy planning stages curriculum.

This teacher reflection about a primary school project also tells about the inclusion of children of different grade levels in their sustainability project. The school grounds are described spatially in relation to the different areas and how they might be used by children – the centre, the back of the building, where the children will take an interest. Each Year level has different tasks in relation to the establishment and maintenance of aspects of food production in the school grounds. Children in the final grade, Year 6, assume the role of ‘guardians’ to protect the food gardens. They will pass on their ‘knowledge’, the knowledge formed in relation to food gardening. They do this in their mentoring of children in Year 5 to take on this role as the end of year approaches and these Year 6 children leave to go on to secondary school. In this way the garden project integrates the cycle of children’s growth and progression through different grades in school and the cyclical requirements of the school garden in planting, maintaining, harvesting, and recycling.

Summary teacher reflections on their school-based projects

In each of these schools the projects involve activities by the children which change the schools’ grounds and the nature of the relationships between children and their school grounds, and the relationship between learning that takes place inside the classroom and learning that takes place outside the classroom. In each case children of different age levels participate in the projects, creating connections across the different age groups. Connections are created with community organisations and parents through working bees and provision of materials and equipment for ongoing work. At these early stages, however, it is not yet clear
whether the projects can be integrated into the school curriculum or what will be needed to produce long-term sustainable change.

In-depth oral place-story recording of one school-based sustainability project

The oral place-story recording was designed to trial a method of supporting teachers to record their reflections. The teacher in this particular school responded to our invitation to assist teachers in their documentation by visiting their schools and recording the teachers’ stories of their projects in the actual places where the projects were undertaken, using digital audio-recording and photography. This school is a medium-sized primary school in a mixture of new peri-urban housing and older, more traditional, semi-rural development. The recording was made at the end of the school day. The teacher, a school student who participated in the project, and a visiting work experience student from another university took part in the recording, which occurred during a walk on the school’s trail.

Teacher:
So what we’ve got here is a small remnant of Cumberland Plain. In this small remnant are your usual broad-leafed ironbarks, your paper barks, your casuarinas. But what we’re fortunate enough to have in this little section is a strand of the hairy wattle, the endangered hairy wattle. That was already here, and because we’re so close to Windsor Downs which is a reserve of Cumberland Plain, I think this is just a small remnant that’s been left over from the development and building in this area. So when our students went to ‘Alive!’ to the initial conference and we were asked to plan a project, we were talking about the bushland here and what we could do with it. And we did originally have a trail that went through here, but it had long since been overgrown by weeds and bits and pieces, so they decided to resurrect the trail and make it functional again. So that’s what we’re doing.

So we’ll start at the start of the trail. Along here these are the plants that we’ve planted. Melaleuca plants, because we’ve had so much African Love Grass which is choking all the native plants, so we just wanted to bring them back in again and hopefully they will flourish. So what we’ve done is we’ve linked up, on the day we linked up with TAFE, Peter Mobs, one of the TAFE teachers and he has a group of students working with him on sustainability and environment, and they’ve been coming into the school and doing a bit of weeding, identifying the weeds. Mainly the Love Grass and they’re working in small sections, just clearing small sections and allowing them to regenerate natively. And that’ll be an ongoing link that we have with them.
This is the beginning of our trail, a bit of the mulch has been washed away but we have paper underneath to stop the weeds and things from growing through, might need to go over it. And our paper bark trees were cut down because the neighbours were complaining they were getting lots of mess in their yard, so instead of just chucking them out we are using them to outline the trail. We’ve also planted the plants all along here.

Here we have just a kind of area of the endangered hairy wattl e and it got its name because of the hairs on its stem. It’s great when it’s in flower. And these, part of the project that, part of the things that we want to do is to look at the plants in different seasons and have a look at what is happening with the plants, so what sort of flowering, what sort of seeds they produce, what sort of foliage, and what, kind of, inhabits them. Because the birds, we noticed last year the parrots, the pink galahs were coming in when these are in seed and they just go nuts. When we were doing the mulching and the trail a couple of weeks ago, we also saw that there were like baby birds in there, like in nests and things.

You can really see that the African Love Grass is choking it. There’s a lot around there. The wattle actually sends out little shoots. That’s how it regenerates here. The seeds don’t cause it to regenerate. It sends out shoots underground, and that’s what helps it to regenerate. So the grass is actually choking its ability to be able to do that well. They send out runners, yeah, they do make the seeds, but I was told they actually need fire to be able to produce. You can’t have a fire here so the runners are what we rely on to keep it going.

And the other thing that we discovered when we were doing this trail is that the neighbours that line this part of the trail, not all of them, but some of them, tend to throw their garbage over the fence so one of the things that the Green Team is going to look at doing is writing letters and putting flyers in their letter boxes to see if we can minimise
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some of that, because we’re constantly cleaning, and they’re not fans of the trees either. Yeah, over there we had a whole section of them cut down. So another letter we might write with the Green Team is perhaps a letter to council looking at ways that we can actually keep the trees and maybe just trim them – trim them enough to bush them up so that they’re not impinging on those.

Student:
Microbats and little frogs live in those, so it would be good to get, when it’s really moist the frogs hide under there and it’s sort of a protective layer for them from birds and things, birds can’t really get in there. And then the microbats, they sleep in there at daytime.

Along here we have the Casuarina which this is the male, and you can tell the difference between the males and the females because the males have little orange tips on the ends of their, well, you really couldn’t call them leaves, like little twigs. And then females, they get little red flowers and little nuts. I don’t think we have many females. And then we have the Ironbarks on this side.

Teacher:
So eventually what we’ll do in this section here is clear the rubbishy stuff and replant some of those natives. And the project’s so long-term and ongoing because we can now collect seeds and germinate them ourselves, grow little plants and plant in the area. I was saying, I was really interested to hear the bird project [another ‘Alive! project], you know the ones where they’ve made the boxes? Because we could do something similar here too. Or even little platforms, I don’t know, things that would just encourage the birds to come and use the area more than they do maybe, or stay around.

Student:
Along here we have some saltbush. It used to be bigger. It used to be up here but I think it’s died out, as you can see the little dead bit, now it’s down here. And we have it along here as well. And then we have another forest of hairy wattle which is good.

There’s a very special thing that we’re going to show you. It’s a plant and it’s over 250 million years old, over generations, so it’s just growing around this area. It’s maculara plant. It’s over 250 million years old, not this one, but it goes back for generations of 250 million years. And we’re very lucky to have it, and we also have it up there. It’s a very unique looking plant. I think it might be spreading. But we might have to do a bit of research on it, because we don’t really know much about it.

This grass tree is special too. Look at that growing in there! The fairy wrens, that’s how we attract fairy wrens and things, is plants. The little fairy wren birds hide in them from the bigger birds and things, so yeah, it’s good.

And we come to the end of our trail.

At the end of the walk the teacher says that she is planning to develop a curriculum document so that other teachers ‘can pick up a folder and go, now, for our unit of work on sustainability or living things, I can go out and there’s a whole heap of activities and a whole heap of information on the area’. For this teacher, it is getting partners on board who can help with the grass clearing that makes it manageable, viable and sustainable. It is also critical, she says, to get other staff in the school involved, because ‘schools are such busy places’, ‘things
like this get put on the back burner for a lot of teachers because you know, it’s not tied to NAPLAN, and it’s not tied to the reporting process’. This teacher observes, however, that language development is an important part of the learning that is happening in this project:

It wasn’t just the activity of planning the trees, it was the language that was coming out. The kids were having these lovely discussions about what they were doing and who the person from TAFE was and what they liked and what they were into and a film they might have seen. It was just this beautiful engaging conversation, and so much language coming out of it, the names of the tools and actions that they were doing. It was great. I just thought this is fantastic. This is kids actually picking up stuff and learning incidentally, for stuff that I didn’t, I didn’t actually plan that bit. They just loved it and they were so excited and so enthusiastic and there was so much, you could just feel the energy as you walked along.

Language, in this place, arises from the children’s engagement in a dynamic living system that simultaneously imparts life into their learning.

Summary of oral place story

This oral place-story illustrates the dynamic interconnected nature of this school-based project in which the small area of remnant Cumberland Forest at the bottom of the school ground provides the basis for interactions with the plants, birds and animals, TAFE teachers, neighbours and children, all coming together to learn in this place. Both child and teacher are learning to identify the different plants that live in this place, their status in terms of the disappearance of the Cumberland Plains habitat, how to care for this small remnant and to enhance it by planting native species, collecting seed and watering in extremely dry times. All of this enhances children’s language learning, by learning the language of their place. The project is ongoing, as are all sustainability initiatives, with plans to develop resources for teachers and schools.

Teacher evaluations

In the last session the teachers were asked to reflect, in small groups, on the whole process of their professional learning, guided by a series of reflective questions. Their responses were recorded on butcher’s paper and they are grouped below according to the key questions they addressed.

What have we learnt?
Teachers learnt what needs to be done to establish successful sustainability projects and learning experiences for students. This included the need to:

- Think of the BIG PICTURE
- Have projects that are relevant and local
- Plan projects that are small and manageable, with achievable tasks
- Have students own the projects

Specifically with the last point, teachers learnt that ‘students became highly motivated with these “hands on” projects’ and that when students had ownership of projects there was an observable ‘joy’ in their learning.
Teachers also learnt that ‘time management is key’ and that this required good planning to ensure the amount of time and energy dedicated to projects did not become overwhelming.

For many teachers building and cooperating with a support network of knowledgeable and enthusiastic personnel, both within school and the community (including experts) was important. Put simply, one teacher noted that ‘it takes more than one person to push the barrow’.

To summarise, teachers proposed that project management skills are paramount. Scoping the project was important, as was managing time, resources, personnel and students within the available curriculum space.

**How have we, the students and the community benefited?**

Some overall benefits listed by teachers highlighted the positive outcomes of the funding which enabled improved infrastructure at their local school (physical improvements in establishing gardens, with subsequent plant and wildlife regeneration), the cross curriculum and cross year level benefits of involving other classes, faculties and various sections of the school grounds, and the enhancement of resource sharing amongst the group.

Benefits for the teachers themselves were identified as providing new environmental skills in bush regeneration and plant identification, and that learning these skills in association with meeting new people gave them a sense of ‘opening up the world’.

Teachers felt students benefited from their projects in terms of gaining awareness, academic and scientific understandings of their local environments, being able to put their ideas into action, being able to inspire other children to ‘get involved’, feeling the responsibility and leadership of belonging to a project and a sense of their own well-being in the outdoors.

Benefits to community members were identified by the teachers. These included receiving very positive feedback from parents who had become ‘willing to dedicate time and money to see it [the project] work’, providing an outlet and focus for parents and their friends, and learning from elders in the community.

**What were our challenges and obstacles?**

Several challenges relating to the constraints created by time were raised by the teachers. These included the time it took to:

- plan and organise projects and the logistics of having a project roll over into the next calendar year
- prepare for the conference
- have children engaged in the activities, which often took them out of class or engaged them during recess and lunch.

Working with and relying on other people was mentioned as both an obstacle and a challenge. For one teacher ‘getting more people on board and whole school engagement’ was a challenge, whereas, for others, ‘working with other groups led to slow movement’ of projects and relying on university students who ‘let staff and students down on multiple occasions’ created difficulties.
The idea of ‘inertia’ was raised with the consequential difficulties of maintaining funding to continue future activities and staff energy to continue to coordinate all aspects of projects.

**What aspects of the professional learning would we like to keep?**

Teachers were impressed with the professional learning sessions, specifically highlighting their learning from experts and the support from group participation and also appreciated the ‘chance to catch up’ with like minded teachers in such a supportive learning environment. In this way support was the critical issue raised. In some instances, teachers commented that this support was of equal importance to or more important than the funding to ensure that the projects were implemented and that they had people to help them through to making them a reality. Appreciation of the support provided through this participatory action research covered a range of personnel and included having a lynch pin person, the coordinator, to ‘guide us and organise us with updates and reminders’, the video crew and the ‘on-going support from HEEN’.

The conference was reported by one group as ‘AMAZING!’ and an element that should be continued in the future.

**What aspects of the professional learning would we like to change?**

More professional learning in media training for filming was one component of the project that teachers felt should be added. They indicated that they would like to be more reliant on themselves to do the filming and referred to this as including ‘media training for filming DIY’.

Another point where a change was suggested was to have a more ‘relaxed timeline’, as projects required significant input over an extended period of time and, as one group outlined, they felt the project was ‘hard to organise on top of “normal” school load’.

One final comment referred to the location of the professional learning sessions. Whilst the groups appreciated the location at Brewongle EEC, they also suggested that they would have liked to ‘rotate meeting sites through schools to see other group projects’.

**What were the key factors?**

‘Inspiration’ was a key word raised across two groups. One group felt the planning day and the conference was an ‘inspiration’ with a second comment relating to the ‘inspiration’ provided by the whole project. Coupled with the feeling of being inspired by the project, other teachers commented that the ‘practical sessions and workshops’ and the ‘great speakers’, expert advice and assistance provided were all key factors.

In terms of educational outcomes for children, a key factor for other educators was that the project ‘gave another avenue for children who don’t involve themselves in other mainstream activities’ and as such was very successful.

One final comment was about the importance of maintaining the networks and contacts through having access to a ‘list of people who can help’.

**Where to from here?**

The final reflection phase was to consider two questions. Firstly, ‘Where to from here?’
Teachers were asked to consider, on conclusion of their projects and professional learning, what they felt were still ‘unmet needs’. The teachers felt a lack of control over time (to develop ideas, meet with students and to do physical work) and money (to build the infrastructure to reach goals) to attribute to projects, and questioned their own expertise in terms of needing more knowledge on how and what to teach students in sustainability education.

Value adding to teachers’ roles
In conclusion, the teachers were asked to reflect on the question: ‘If you could do one thing that would create the highest value in your role, what would it be?’

Teachers felt that it was of most value to use a ‘domino/knock-on effect’ to share/pass on knowledge and enthusiasm with other staff at their schools, to affect whole school programs, and to enlist others, especially the students, to participate in their sustainability work. They suggested that in this way they would have a sense of self-value in being able to see their ‘legacy’ and value in the work they had achieved. This notion was also discussed in terms of being able to extend ‘networks and support with other teachers and experts’.

FACILITATOR REFLECTIONS

The Teachers@Sustainability pilot study was designed to take place in relation to the initial and final conferences to support the teachers in their professional learning throughout the ‘Alive!’ project. The whole professional learning model therefore included the initial one day planning conference, the three half day professional learning workshops, and the final two day presentation conference. The pilot study focused on the three workshops and was resourced by the facilitators themselves.

The three facilitators who developed and led the professional learning project brought to it different perspectives and areas of expertise. Zhan was co-ordinator of the ‘Alive!’ project and had the closest ongoing connection with the schools and teachers; Mark is Principal of the Brewongle Environmental Education Centre, which he offered as the venue for the professional learning activities, and had been previously in conversation with Margaret about a professional learning for sustainability pilot study; and Margaret had newly arrived in her role as director of the Centre for Educational Research at the Kingswood campus of the University of Western Sydney. Her first connection was with Mark Edwards and their discussions about teachers’ expressing a need to learn how to integrate sustainability into the school curriculum.

The data for this section consists of facilitator reflections recorded after the first two workshops and individual facilitator interviews conducted by Margaret with Zhan and Mark after the final workshop.

Place and identity

I’m a big believer in story and I love story, and we use a lot of that in our teaching and learning programs here at the centre. But that story that we tell is about this place, through time and into the future. I think in terms of where should action research take place, where should our education for sustainability take place, it’s at our place. It’s my
place, you know my place being mine or the teacher’s place, their school, their home whatever. (Mark)

**Place and identity of the facilitators**

Zhan reflected on her passion for involving young people in environmental action as being the origin of the ‘Alive!’ project. As an educator she had realized that while her students leave her classroom knowing how to read and write, ‘if they don’t have a sense of connection to the world, the earth they walk on, the air they breathe, if they don’t have a sense of respect and care for that, then have I failed as an educator in a really basic, primal, fundamental way’. She had attended a conference about environmental issues in London and observed that there were very few young people in the audience, which lead to her passion for involving young people in environmental action:

...it really came from something very internal within me so it was something I very deeply believed in so I wanted to give it every opportunity to make the most of it and then to really give everything that I could to it as well, which I have basically.

Zhan had grown up in western Sydney, ‘this whole region is sort of, my region and I feel quite passionate about the issues that are here’. She gravitated towards the Hawkesbury Environment Network and proposed the idea of the youth project as the basis of an application for an environmental education grant and the idea became a reality. At the end of the ‘Alive!’ project Zhan had a sense of teachers’ development throughout the process, from when she had first met them. Initially, many of them were interested but hesitant to become involved. As a result of Alive! she has seen them start to become leaders in their schools and local communities, ‘to see that they see the need, you know it hasn’t just come from someone else saying “This is really important!” They can see it and really start to talk about it’. Mark reflected on his own professional learning through the participatory action research in which he had engaged in a process of observation, action and reflection. For him it was an opportunity ‘to see, to learn by doing, to see action research in action, in practice, then to enhance the general teaching and learning practice of our teachers, to build their capacity especially in the context of environmental or sustainability education’. Through the process of engaging in participatory action research Mark reflected that he needed to slow down his own practice. Rather than ‘quickly plan and then we act, but sometimes it needs to be just pulled back, you know, pulled back on the reigns a little bit. Reflect on it a little bit more, and then observe, slowly, some of the changes or the other aspects of what a project can bring’.

He was particularly concerned with the seemingly intractable problem of how to embed sustainability education in a ‘very busy curriculum in schools that reflect the busy society in which we find ourselves living and working’. He was interested in understanding what the enabling factors were for teachers to engage in their school-based activities and how they were going to make it sustainable in their schools.

*We’re always talking about how to engage the disengaged. If one way to do it is to get a group of schools to nominate an environmental project if they don’t have one already – so whether it be a garden or you know the examples they could choose from, whether that’s a really fundamental beginning point for the whole thing, teachers as researchers, sustainably, introducing schools to that concept, whether that is a good model for that, I think is an interesting question.*
For Mark, the concept of ‘teachers as researchers’ was an important one and he was keen to
learn from the teachers the processes that they went through and what the outcomes for them
were.

For Margaret, the opportunity to collaborate with Zhan and Mark in this small pilot study was
a way to connect her previous work in Victoria to her new location in western Sydney. As a
long time researcher about place and sustainability Margaret had moved back to Sydney after
a long absence and was coming to know a very different Sydney than the one she grew up in.
She drew on her experience of getting lost on her way to the first workshop at Brewongle to
share her sense of the importance of ‘unknowing’ as a stance in research. Through starting
with this sense of unknowing she hoped to become involved in the place, its people and
communities and the sustainability learning of local schools and teachers.

**Place and identity of the program**

As facilitators we felt that the creative approach of asking the teachers to draw themselves
and their places worked well as an introductory exercise to ground the teachers in their local
places and frame the series of workshops.

*In the first instance in Workshop 1 we did the ‘My Place’ art, and I think if there were to be
like a little story book or some sort of little report, that art I think would form a really
important component of it. A picture tells a thousand words and all that sort of thing. So I
thought that was quite an effective methodology to use. And I suppose at the start I
thought, how would the teachers take it? I had my reservations, but the teachers actually
did it well and they did it seriously, and they actually had some really strong and powerful
statement to make about their place and if you come back to indigenous culture,
indigenous culture is a strong identity in your community, strong association with local
place, and all of that brings, it brings in their individual identity and their sense of self and
being empowered. I saw that come out in the drawings and in the statements of the
teachers when they did the ‘My Place’ art.*

We felt that the teachers could have benefited more from this exercise if they could have
talked about their drawings in small groups:

*I think if I did it again, I’d get everyone to talk about their drawings, because I heard a
couple of conversations individually. People were still sitting in here and everyone went to
afternoon tea. They were telling each other ‘This is...’, explaining their drawings and
there were two people sitting there who were fairly quiet, but they said the most beautiful
things in their drawing. One of them was explaining that this is where she lives and she
looks down on the school and the school does all these things. It was a whole kind of
holistic thing of fitting everything together. And the other guy had this amazing drawing.
You’ll see it when you go through, but it had a McDonalds sign as the sort of symbol and it
had these bird prints and a water hole – all aboriginal symbols, a camp. So they were just
really, really interesting and it would have been great to have been able to go through
everyone, because that connects people in, once they share their story at that level.*

The exercise was not about ‘control’ but about ‘opening’ to a different way of thinking and
connecting, guided by the Place questions: ‘They can look at those questions and think about
those questions and answer them, if they wanted structure. But they can make up whatever
they want’. The Place questions served to guide the teachers’ and youth workers’ reflections
and shape the way they continued to reflect on their ongoing connections to place in their
school-based projects: ‘I love those questions about place. They’re so powerful, as adults for us to reflect’. Twelve months after this first workshop a teacher reported that she had used this exercise with her class with great success. The students were intensely engaged and produced beautiful writing.

Coming together in this way reinforced the idea that the teachers were leaders in their local areas: ‘They’re already champions for taking it on’. The teachers themselves recognised this, saying ‘We are going back to our little patch. We are the crusaders’. We saw them as the pioneers and the workshop sessions as really critical in supporting the teachers’ pioneering ventures by bringing them together.

In the larger context of the series of the three workshops the facilitators felt that it was also important to connect teachers to what is happening in other parts of Australia: ‘some long standing schools that have done that work over a lot of time and what are the issues? and how do they embed it in curriculum? and how do the teachers do it, from past research?’

*I think what they could see from there, is that what you’re doing, you’re not alone in a broader context and on a larger scale of what’s going on in this state and across the country and then to just have that discussion about well, what are those? Drawing out, just teasing out the main big contexts or points of what’s going on there. What partnerships and it was integrated...your one here in terms of that first school, the photo, it had visual arts and obviously there's other things that were the aesthetics but beyond that, there was curriculum – sustainability...it's integrated, how do we insert that?*

Place as a methodological framework continued to be powerful throughout the project with the addition of a place-story recording of one of the school-based sustainability projects.

*When I read the transcript of the one teacher when they were making the track through Woodland Plain Ecological Community on their school grounds, again that was a powerful reflection of the project. It’s a powerful project in terms of why am I here? Why are you here? Why are we actually here, is to take the learning outdoors! It’s that – being outdoors can make a difference. It builds the literacy and the numeracy strengths of our students. And once again it comes back to my overarching goal, you know like, why did I want to be here? because there is this misconception about: What is education for sustainability? It is everything. You can achieve outcomes from this perspective in teaching and learning.*

The place-story recording of this individual project provided a way to support the reflections of the teacher involved in the light of the time pressure which proved to be the most challenging aspect of this pilot study.

**Pedagogical processes**

*I think one of the things that I’m learning is that I don’t need to give solutions, they actually know what they need. I’m sort of thinking, shifting to going, it’s probably more about creating space and allowing them to come up with those solutions themselves, because that’s more powerful as well. And they already know what the solutions are really.*

As well as reflecting on the content of what teachers might need to learn in order to carry out their school-based sustainability projects and integrate them into the school curriculum, the
facilitators reflected on those processes of teaching and learning that worked for teachers in the pilot study. The way that we did this was to observe and reflect on the levels of energy and engagement and the positive or negative qualities of the silences as teachers participated in the workshops.

...there were a few people who weren’t so engaged, but that also reflects where they’re at also, when I work with them. So there were a couple of people that I saw and I thought, it didn’t surprise me that they were holding back a little bit or they were a bit, I could sense just, not hesitant, but reserved in coming forward.

We observed that the teachers’ interactions with each other were, overwhelmingly, one of the most beneficial aspects of the pedagogical processes of the workshops. After the first session about place in the first workshop, for example, we noticed that teachers continued to talk to each other about their place-story drawings, staying in the teaching space instead of going to afternoon tea, and at afternoon tea milling around and talking. ‘I think there would have been a resistance, even to – I think it was important the way that we started, sort of, like breaking it open a bit, you know like in, yeah thinking about – I think it was a good way to begin’. The starting point of connecting to place and identity continued to enable vigorous interactions among the teachers where there were opportunities throughout and in between the sessions.

It’s always the most beneficial part, I’ve found for myself. It’s like a therapeutic session. Even though, you’re out of the school which is fantastic, a different setting for yourself for the day, you’re in a professional learning exercise, so you’re getting knowledge and skills and things in another area that are going to effect and improve your teaching back in the classroom which is great. And then you get to share all these common stories with your colleagues from other schools – all in the same boat, because we go back to our classrooms and it’s head down and teach, teach, teach sort of thing. So sharing your story is valuable or invaluable.

More than just the benefit of interaction, however, we observed the ways that working together as a collective added to the teachers’ ability to undertake this work. Often in an individual school a teacher is supporting sustainability learning alone, but by coming together for professional learning across a local region teachers learn from each other.

You know what else is really cool there, was there weren’t a lot of really jaded kind of views in – like I know some people can go, ‘Man I tried to start this project and it fell flat’ or ‘I started this and I moved to another school’. I know a lot of teachers can get like that. It’s teamwork. Everyone here was just... – and there was really – I loved that – who was it that said ‘class envy’ or something like that?

The value of this sense of the collective is that everyone is part of the larger question of how to address escalating planetary problems through education – and none of us can do it alone. Pedagogical processes need to reflect this and to open a space where we support each other in finding solutions to small local problems that contribute to the whole. It is a pedagogy of collective participation rather than individual learning.

I don’t really mind that, I mean if it doesn’t – ... [talking over each other] and if that’s what happens, that’s what happens. I don’t really want to control it in that sense. I was really, really pleased with how the introductory exercise went and I was drawing on that for the way that you might record it, because I wanted to connect them into the idea of
themselves and their place and I think it’s structured enough with those questions. They can look at those questions and think about those questions and answer them, if they wanted structure. But they can make up whatever they want.

The balance to achieve in professional learning for sustainability is to provide enough structure and framework to enable teachers to link into their own place and identity learning so that they can come together and build a sense of a regional place-based collective. The ‘letting go’ that this requires is the challenge for the facilitators, who are no longer the experts but participants in the larger story.

*I think we learnt that and by listening to the conversations of the teachers this afternoon – what stood out for me is that it’s the ownership of the teachers when they’ve been let go, when they’ve – yeah when the student’s take the direction and really do fully immerse themselves in their project. I think from that comes real learning and some of those moments the teachers have provided here, I think are potentially you know, like uh ha moments for student’s, tuning them into the wonders of the natural world, and tuning them into themselves as learners in their own right.*

Part of the pedagogical process of this project is to establish a sense of connection to a longer term future of support, beyond the time pressure of the professional learning workshops conducted in the pilot study and indeed of the ‘Alive!’ project itself.

**Time**

...and the time factor, you can never get away from time factor.

**Place and timing**

Our initial thoughts about time related to the timing of the workshops on a Friday afternoon at the Brewongle EEC. Brewongle is a beautiful location for the workshops, in a natural bushland setting overlooking the Hawkesbury River as it makes its way towards the sea. One of the earliest settlements in Australia, the site is the original local school built in 1878, with a schoolhouse and school teacher’s residence built of local sandstone. The drive from Penrith takes over an hour, including a car ferry crossing of the river. The feeling is one of slowing down, coming to a different sense of time/place. Our discussion shows our sense of how the ‘Friday afternoon factor’ worked.

That’s the other good thing, it is the weekend. They don’t have to switch into another school day tomorrow. It’s kind of relaxing and it’s sort of like coming to a nice, even as I was coming here, it was like ‘oh, it’s like coming to a beautiful space’ and it’s – you know it’s the end of the week. I think it’s a little different. There are probably not a lot of workshops for people to leave to on Friday afternoon, but it’s a different setting for them. It is the end of the week and maybe it is the time when they can try and get rid of some of the baggage of the school week and focus on this project again, and keep it with them for the weekend, before they go back to work on Monday.

**Time pressure**

From the very beginning, the pressure of time for these busy teachers featured in almost every conversation about the workshops. Our sense of concern was first raised in the first workshop by the teachers’ apparent lack of knowledge about the participatory research dimensions of the pilot study. Interpreting the silences around the question of research
consent, we realized that even though information was sent via individual emails it seemed that teachers had not read them.

People often don’t read their emails do they? I was a bit [worried about the silence]. I thought that there’d be stacks of recognition, ‘Yep we got this. That’s fine’. Yeah so I was a little bit, it just seemed a bit, they were taking it in for the first time. And about, probably about half of them signed consent forms. I’m wondering whether or not we needed to probably make it more clear, the research and the aim of why and what’s the aim of that?

From the facilitators’ perspective, then, the pressure of time influenced each workshop, with the half day allocated never seeming enough for what needed to be covered: ‘To draw that out and to really get them to identify what the key areas would have been fantastic but just as time’; ‘I was hoping we would have some discussion there but it is time pressure’. We thought that potentially it would have been better to have whole day workshops in order to allow time for deeper reflection on the important issues that were being discussed, but time and resources were too scarce.

By the end of the second workshop, facing the end of the funding and the support available through the ‘Alive!’ project, we realized that the timespan of the series of workshops was truncated and did not allow enough time for the professional learning the teachers needed in order to continue to integrate their projects into their schools and the curriculum.

I think that they needed more input than they’re getting. I think too it feels to me like we’ve only just got into it. There was so much difference between last workshop and this one for me. I felt like they had bonded as a group, that they had made really good progress, that they were committed and they had bought in which they hadn’t last time. I think they were really keen to learn and I think they knew what they wanted to learn this time. It’s just the beginning and I think you would have to have one more [workshop] to just even get a sense of completion, a sense of closure so that sort of made it doubly difficult ’cause I feel like we’re kind of half way in a process of professional development and that there’s the precipice.

The time pressure of the second workshop was made greater by the expectation that teachers would prepare their school classes to present their school-based projects to an end of project conference early in the following year and to produce both evaluative reports for the ‘Alive!’ project and their reflective portfolios for the pilot study. The presentation performance took precedence as a requirement of the ‘Alive!’ project, so the response to the pilot study was modified.

All of them probably have some degree of hesitance and not maybe as much as Mark, I would require something much less of them at the end in terms of recording so I would require just some kind of presentation and some kind of documentation so that you actually get that, ’cause the performance is an extra layer, a whole extra thing. It’s something new.

Loss of slow time

The impact of this additional requirement, on the professional learning workshops, was an overall loss of time for the reflection that is an essential aspect of participatory action research: ‘I just want to see, I just want to hear some more reflective statements from them in the next sessions about, where they’re at with it, what they think, and – but that’s, you know,
I think they’ve done wonderful things’. It is in reflection that deep learning occurs. Reflection is the process whereby the teachers’ experiences of immersion in their place projects becomes articulated in language that maintains their connection with the materiality of their local places. This is where place experience becomes available for pedagogical work and in the teachers’ professional learning through their place-based projects. It is the teachers’ abilities to reflect on their learning as well as the students’ learning that is critical.

Place/time of sustainable futures

...that whole concept of sustainability I think a key part of that is about resilience and I think of an ecology like the web, the spider’s web and even the web of life and this is one thing I’ve been conscious of from the beginning, that for it to continue or for there to be that resilience if one person leaves, how is it going to continue and how is it supported? Like in a web, one strand can go and yet it still exists.

As facilitators, we recognized that in the global sense of long term planetary sustainability, the ‘Alive!’ project, and the professional learning of teachers, needed to move on and become sustainable and enduring. This question was there from the beginning and was something we struggled with towards the end as the funding and resources for the work came to an end.

Integration into school curriculum

One of the important ways of moving beyond the time constraints of a project-based approach is to integrate place-based sustainability learning into the school curriculum – ‘the integration into curriculum and that’s the only powerful driver, beyond that one person’. While this integration was not going to be fully achieved within the short timeframe of the ‘Alive!’ project and the pilot study, it was important to see this process as a continuum from where these schools were at the beginning of the project to where they would continue to into the future.

I was envisaging that their discussion, a lot of those success factors of pedagogies or practice that enable us to mainstream a bit and then say, ‘Well, hey guys you are already doing some of these elements. You’re doing it! Not doing everything but you’re doing it’, and it was that continual reinforcement and energizing and motivating that group of teachers. I agree with you about that. I think we’ve just started but we had that discussion before about putting another one on, so I suppose it’s a learning curve for us too.

We saw integrating sustainability learning into the culture and curriculum of schools as, importantly, one which is supported by the Australian Curriculum. Our recognizing that schools and teachers have considerable initiative in the current devolution of responsibilities to schools further emphasized for us the possibilities and challenges of sustainability education.

The ripple effect

One way to increase the learning and the uptake of education for sustainability was to share the school-based sustainability activities with interested people beyond the schools who participated in the ‘Alive!’ project. An effective way to do this was by connecting with university students from the School of Media and Communication Studies to produce a video for public dissemination.
Yep to really ripple out and that’s where the idea of the documentary came in and initially it was one documentary and when a lot of stuff in this project got bigger it went from one to thirteen mini documentaries plus one overall documentary and then instead of just a couple of film makers it was fifteen film makers. So it went from a little production to quite a big production very quickly…it benefited the project and I could see the worth of these film makers in going to go out into their industry and then influence potentially their industry in thinking about [sustainability].

The production of the documentaries for each of the schools and the compilation of a single full length documentary had its own ripple effect in relation to the students who produced the videos. The full length documentary was shared at the final conference, where each school presented its own project, often using its individual video. The final celebration conference was a significant part of the teachers’ professional learning as they prepared their students to present the school-based projects and learned from other schools’ sustainability projects.

**A model of professional learning**

The ‘learning curve’ for the facilitators involved seeing the pilot study both in terms of the ‘Alive!’ project, and beyond, in the larger context of the teachers’ professional learning. In this sense we recognized the whole model of place-based professional learning for sustainability as being made up of the initial conference (when all the teachers came together with all of their students to plan their school-based and community-based sustainability projects), the final conference (when teachers and students presented their projects), and the three professional learning workshops: ‘I think the model is fantastic. The model of actually providing schools with a small amount of funds to choose a project and then doing professional learning around that, I think is a fabulous model for professional learning’.

I think also too when it’s book-ended, it started with a gathering, with the planning day, that was the beginning part of the process and then it will finish with a big gathering as well, so it has been a journey. When you can have an initial thing and then allow people to do what they do, support them and then come back together and share in a big way and really profile that, these were all key elements to the success of Alive!

The identification and planning of place-based projects at the initial conference was an essential feature of the overall model. It enabled the final construction of a network for regional place-based sustainability education that could incorporate other schools and partners into its scope.

**Networks for sustainable futures**

Participating in the final workshop after the conference gave us the opportunity to reflect on how support for the school-based sustainability initiatives could continue, through the formation of a place-based regional network of schools which would continue the work into the future.

But it’s also the long term sustainability of this as well. You know this is something I’ve always thought about…because it will finish after the conference and where does it go from here, like how do you support this long term? We can certainly look for planning and stuff but we’re also trying to see whether council can take it on board because there are no environmental education officers, like usually the networks at least are supported by council and so looking at other ways to keep this going.
The Hawkesbury Environmental Education Network (HEEN) has now been established as an ongoing support, where teachers can come together at their schools on four occasions (once a term) to continue to support each other: ‘I think that the grass roots then will push up and stuff like this, well my hope is, that this will push and that can potentially build those critical mass points of awareness to say this is happening’. The support of the United Nations Regional Centre for Expertise in Education for Sustainable Development has been crucial throughout and continues to broker links to support and funding opportunities. The framework, of connecting a network of local initiatives across a region, which is then linked to global networks, is a place-based model that builds from local place-based projects such as ‘Alive!’ to produce greater momentum for transformative learning.

REFERENCES


APPENDIX 1: WORKSHOP 1 PROGRAM

Teachers@Sustainability Workshop 1
Brewongle EEC 1-4pm Friday August 31, 2012

Workshop Plan

1.00 – 1.15 pm
Zhan, Mark and Margaret to introduce selves and program
Mark to welcome to Brewongle and acknowledge traditional owners
Zhan to introduce ‘Alive!’ project and sponsors
Margaret to introduce research aspect and to hand out Information and Consent sheets

1.15 – 2.15 pm (MS)
Margaret to facilitate each person to introduce themselves by producing an A3 representation of ‘My place’

2.15 – 2.30 pm
Tea break (outdoors, weather permitting)

2.30 – 3.00 pm
Mark:
What is sustainability? (workshop outdoors)

3.00 – 3.30 pm
Zhan:
Workshopping our projects (small groups, recorded on butcher’s paper)

3.30 – 4.00 pm
Margaret:
Teacher as researcher
Discussion about journaling in creative ways (photography with iPhone, short videos, drawing, storytelling)
Ongoing support on wiki

Zhan 5 mins closing:
Ongoing support on wiki
Housekeeping
### Teachers@Sustainability Workshop 2

**Brewongle EEC November 2, 2012**

#### 12.45 pm
**for 1pm start, cup of tea on arrival**

#### 1.00 – 2.00 pm
**Reflection circle**
*Brief welcome from Mark, Zhan to facilitate, use recorder as message stick, reporting one by one, then plenary*

Where are we up to, what has been working well and what are our challenges?

Outside yarning circle

#### 2.00 – 3.00 pm
**Learning circle**
*Mark to facilitate, Margaret and Zhan to present*

What can we learn from other’s experiences of integrating EfS into the curriculum and pedagogies of their school work?

Inside presentation of other schools who have successful environmental sustainability programs

Discussion: What can we learn from these other schools to apply in our own situation?

#### 3.00 – 3.15 pm
**Afternoon tea**

#### 3.15 – 3.45 pm
**Planning circle**
*Margaret to facilitate, especially to discuss recording professional learning for sustainability during the project, the research, and the option of school visits*

How are we going with documenting our learning in the ‘Alive!’ project?

Ideas for support for documenting e.g. school visits and place-story recording to assist with your reflections

#### 3.45 – 4.00 pm
**Closing summary**
APPENDIX 3: WORKSHOP 3 PROGRAM

Teachers@Sustainability Workshop 3
Brewongle EEC Friday 8 March 2013

12.45 pm cup of tea on arrival for 1.00 pm start

1.00 – 2.00 pm
Group response to reflection questions
What have you learnt through being involved in Alive!?
How has your knowledge and awareness of the earth and the environment developed as a result of being in Alive!?
What were some of the key things learnt by your students/ or girl guides?
What are 3 key things that you would like to continue?
What were the challenges?
What things would you change in this project and what aspects would you keep the same?
How do you intend to continue your project and sustainability education in general? Why is it important to do this?
Has your involvement in Alive! changed you as a person in any way?

2.15 – 3.15 pm
Portfolio presentations or ‘Alive!’ documentary
A 10 slide PowerPoint presentation documenting their professional learning and presented to the group
A 10 page equivalent online portfolio composed of images and words submitted via wiki site or Dropbox documenting their professional learning through Alive!
A 10 page hard copy portfolio consisting of images and text documenting their professional learning through Alive!

3.15-3.30 pm
Afternoon tea

3.30 – 3.50 pm
Where to next? (Mark to facilitate)

3.50 – 4.00 pm
Closing Ritual
Workshop 3. Reflecting/Next Steps: An associate researcher’s perspective

‘When you engage in work that taps your talent, fuels your passion and rises out of a clear need that your conscience draws you to meet, we find our voice.’ (Steven Covey)

Small group sessions were conducted with a focus on participant ‘voice’ as a methodology to envision sustainability curriculum futures. At the time of this workshop session in March 2013 the participants had completed the project implementation. Teacher participants had clearly demonstrated the abilities that inspire confidence in students – talents, attitudes, skills, knowledge, and style. They had a track record of getting things done.

It was in this context that key questions were posed to small groups, asking them to focus on the key elements which led to successful integration of sustainability education programs into the curriculum.

To have the participants step back and examine and reflect on the key drivers of successful sustainability education integration proved a difficult task. The workshop session formed the foundation for rich and honest dialogue concerning the factors enabling, or barriers to, successful sustainability education projects. Many participants noted the issue of time management, but beyond this a central theme of positive educational change emerged from the workshop session. Participants stated that students had been provided with authentic learning experiences, many of which required substantive investigation, collaboration and communication. Through problem oriented, skills oriented or creativity oriented projects students developed a deeper understanding of the complex concept that is sustainability. Projects provided some students with an avenue for engagement that otherwise might not be present/forthcoming for them.

Another positive element noted was that through the physical environmental change in the school, ‘it had inspired other kids to get involved’ and there had been a ‘knock on effect for the wider community’. This and other responses clearly supported the importance of local place in sustainability education; responses were relevant, manageable and effective.

The final moments of the workshop saw participants discussing avenues by which students could connect with each other and their projects, so as to continue the sustainability education process – in other words, to keep it ‘Alive!’.

Subsequent visits have been conducted to one local high school which is continuing its Landcare project beyond the life of this action research project. This school was awarded a Landcare award in 2013 in recognition of its outstanding contribution to improving riparian vegetation and biodiversity values. [Mark]
APPENDIX 4: PLACE-STORY MAPS

The following place-story maps have representation of movement through place indicated by roadways and pathways.

*Place-story Map ID #6* (see front cover)

The walking trail and the plants along it are the main elements of this place-story map. The story legend is also a unique element in this map. At the bottom left side, the icons for the Casuarinas, Grasses, Broad-leafed Ironbark, Hairy Wattle and the Trail are depicted. The walking trail then provides the point of focus. It is drawn from the bottom right corner, up towards the top right, where it turns and goes down towards the centre of the page, up again towards the top left and then down again towards the bottom right. It sweeps across the page in an ‘M’ shape. The map is quite intricate (for example, the tiny brown circles along the trail). The fine brown circles, possibly representing mulch on the trail, completely fill in the trail at the start and at a small section at the end, indicating that the project is in progress.

The positioning of the vegetation images around and along the trail is very delicately drawn with the sparseness or clumping of the species clearly shown. Different shades of green are used for the casuarinas, hairy wattle and grasses, with a dark red for the broad-leafed ironbark and brown for the trail.

*Place-story #7*

A farm (house, shed and two water tanks) at the foot of some mountains, two trees, a river and road are the images in this place-story map.

The river is drawn flowing down from the mountains, moving in a ‘u’ shape through the centre of the page and then flowing off the page at the centre right. There is a billabong between the river and the road that leads to the farm house.

The farm house is of a colonial style of architecture, on piers and with a veranda and it is nestled between the roadway and the mountains behind. There is a small dam or pond in front of the homestead and the shed. The road leading from the farm takes one’s eye to the front of the place-story map but ends behind one of the two trees at the bottom of the page.

This map uses single line sketching for each of the elements in brown, with green foliage on the two trees and on the mountains. The third colour used is blue, outlining the river, billabong and pond.

This place for ID #7 appears to be peaceful and somewhat isolated, with no visible life other than the two trees.
Place-story Map #8

“My self My place” for participant 8, is the local neighbourhood area between the Nepean River and the Mountain Ridge, represented by houses in a circular drive.

The positioning of ID #8’s own house is identified, within the neighbourhood, by the street address written on the house, and includes a “vegi garden” in the backyard, and “My dog walk”, with footprints crossing the road which leads away from the local neighbourhood to the “wild orange tree” at the top right corner of the map, close to the Nepean River. The main focus for the place-story map is the circular drive and the houses in this local neighbourhood, which takes up the full centre of the drawing. The Nepean River is drawn across the top of the page (full width) and the mountain ridge is across the bottom (full width). The wild orange tree has fully coloured-in green foliage and is laden with oranges.

Place-story Map #9

“My Place” for ID #9 is relaxing outside in her backyard. The main features of this story map are drawn along the bottom of the page. These include a house, outside of which a woman is lying on a ‘banana lounge’, with headset and iPod. Musical notes (maybe singing) are coming from the person, who is smiling and relaxing. There is a guitar at the foot of the lounge, next to which are a blue cat and a pineapple. Further along the bottom of the place-story map are strawberries and carrots in a garden and wattle trees which then reach a river/stream at the bottom left. There are trees drawn above the river, with a kookaburra in the tree laughing. Across the middle of the map are two blue lines indicating mountains and above that, at the top of the page, the title “My Place” is written and decorated with green vines which not only underline the heading but also flourish as if growing and trailing outwards on the right. A beautiful sun is drawn in the top left corner, which is bright yellow, with further heat and intensity drawn as small orange flames between the yellow rays.

The dominant representation is of a place for relaxation in connection with sound. The sounds of animals and natural elements are written throughout the place-story map. These are: “Ha Ha Ha” (kookaburra in the trees); “Scratch Scuffle” (possum on the roof); “Warble Tweet Twitter” (bird on the house roof); Musical notes (from the smiling person); “Meow” (cat by the side of the person); “Splash Splish” (river); and “Whoosh” (movement of the wind in the trees drawn as wavy green lines).

Place-story Map #10

The representation of “My Place” for participant ID #10 is a combination of written text and a faint line drawing of a house. The title “MY PLACE” is written in green capital letters, centre top, and repeated centre right but with text in a vertical direction. Further text continues to the right from the top of the page-centred title to explain “MY PLACE is MY HOUSE and MY FAMILY”. Mid-way and centred on the left
side of the page are the words: “At this stage through illnesses MY PLACE is family and home”.

The story text is the dominant element of this place-story map and is accompanied, in the centre of the page, with an outline sketch of a double story house. The text accompanies the sketch, indicating the extended family living together: “UPSTAIRS – DAD’S Home” written in the space within the drawn home and then, “Downstairs US. Our Home.” Red and green pencil lines are used for the sketch and text, with letter size and capitals emphasising importance in the message being recorded.

**Place-story Map #11**

There are four main focal points in this place-story map. 1) The heading “MY PLACE” is centre top of the page in bright green texta. 2) Four large trees cover two thirds of the page, across from the centre to the left edge. 3) The third focal point is the use of brown pencil across the bottom of the page, connecting the words “My backyard”, a chair and an outcrop of seven large brown rocks, which are drawn in a cluster at the bottom right of the page. 4) A flock of four grey birds is flying upwards in the top right corner and appears to be flying off the page. Three small pink flowers are spaced across the bottom of the page. The trees and birds provide the living elements of this place-story map.

There is also what looks like random pink scribble on the rocks and above. It looks as if someone else has contributed to the drawing! Perhaps a child!

**Place-story Map #12**

The neatness and balance of the place-story map of ID#12 is its dominant feature. The images are drawn around the outside of the page, resulting in a substantial area in the middle of the page being left blank. However, one’s eye is drawn to the centre top of the page. At this point the focus of the drawing is a house with two people in front. The house looks to be of yellow weatherboard, with a blue front door and a front garden to the left of the door with red clumping grass plants in it. The two people are dressed in similar clothes, with yellow shirt and blue collar and blue shorts. To the left of the house is a tree under which are three round tank-shaped items, supported off the ground by legs. From the tree, forward to the bottom of the page, there is a garden with green vegetables growing in rows, as well as four red plants. To the right of the garden, and therefore at the bottom of the page and centred, are the words (overwritten in red so the outline is quite thick) “My Place”.

Another garden is drawn to the right of the heading, and includes grassy plants and a pond. In completing a circuit of this place-story map one’s eye goes to the top right hand corner, where there are three chickens walking outside of a grassy area dotted with green bushes. Within this same grassed area there is a family of five people. Because of their small size they must be further away, perhaps neighbours on an acreage property. There is a goat and a sheep with them and also a smallish brown rectangle with a diagonal cross, which appears to indicate a bird’s eye view of a house roof.
**Place-story Map #13**

The dominant elements in this place-story map are vegetation and the use of a single colour. There are various sized and shaped trees over the whole page, with larger specimens at the centre front, top right and left sides and smaller trees on the far left (further away). There is a vegetable garden in the centre front (trailing plants on a trellis) and vegetation growing along the river bank. The entire place-story map has been sketched in shades of brown, with some shading on the trees and ground. An impression of ‘stillness’ is created.

There is a building drawn at the centre left (with criss-cross lines on the roof and front) and another small box-type outbuilding at the bottom right of the page. There is a track/roadway drawn from the main building/shed/house, across a small bridge and continuing along the lower front of the drawing. The river sweeps from the right side, where it is widest, up behind the trees in the centre and then down in front of the building and off the page to the right.

There are water beetles and a platypus drawn in the water, two chickens in the garden, a butterfly flying on the bottom left of the page and a bird sitting outside its nest in one of the trees at the top of the page.

**Place-story Map #14**

The elements included in this place-story map are the person (teacher), school building with school badge and motto positioned in front of the school, and the teacher’s two thought bubbles, one leading back to the school and the other drawing the teacher to family and place outside of school/work. The elements are therefore connected by the teacher’s thoughts of work and home life.

For ID #14, work/non-work life is represented. On the left of the map his work life, the school, is the focus, with the teacher positioned in front but to the right, thinking about “WORK, TEACH, TIME BALANCE, RESPONSIBILITY”. There are $$$ also drawn within this thought bubble, possibly indicating the place to earn a living. The school badge includes the letters MPS and the motto, in a banner below, “NOTHING WITHOUT LABOUR”. The path leading up to the classroom door has a pot plant on the right and there are four shady trees behind the building. Children are in the classroom.

The other story in this map surrounds the teacher’s second thought bubble which leads to three people (family) and a grass clump (outdoors). Below the thought bubble are two shady trees and some blue (water), and above are green shaded plainlands with blue mountains in the distance. The shaded blue area on the right of the plain appears to indicate water, perhaps the Hawkesbury/Nepean water courses.

A range of colours is used, but mainly greens/greeny yellow, blue and brown.
**Place-story Map #15**

The title of this place-story map, positioned centre top of page, is “My Self My Place” and is underlined with a single stroke, with a hook enclosing the “My” and another sweeping under the title to the right. Elements included are trees, each with a nesting box, birds flying around and between the trees and vegetation in two rows across the bottom of the page. The place-story is busy with bird life, with the seven trees drawn across the entire page representing a forest, or quite heavily wooded area. The undergrowth is low vegetation (grasses), also indicating a heavily wooded area. The reader of the story is looking into the forest but the large numbers of birds (20) in the map are coming and going and not disturbed. The birds are all the same colour, blue, which may indicate the same species. However, the bird nesting boxes are also blue, so the elements relating to birds are connected by the colour blue. The undergrowth is a combination of green and brown directly under the trees with clumpy grasses underneath.

**Place-story Map #16**

This place-story map has two very different places within the space. Each takes up half the page, divided by the diagonal that runs roughly from the top left to the bottom right corner. On the right, the story is being told in dark colours and depicts six people, a polluted pond on the edge of another pond, wetlands and eventually the river on the far right edge of the page. On the left, there are three people in a space with chickens, a sheep and a cow, and three trees. Above the demarcation of this place is another pond which has fish and eels and the water is a healthy blue. A more detailed description of the ‘unhappy’ place on the right includes six people (stick images) who are inside a rectangle and beyond the central, polluted pond. All are drawn in black. There are tin cans and other rubbish in the pond and the water, drawn by scribbles of brown pen, is brown and dirty. This polluted water is then leaking into another smaller pond on the right, which, although it doesn’t have rubbish in it, is losing its blueness. The grasses of the wetlands are drawn in black and extend from the top to the bottom of the page, along the edge of the river, which is still blue. At the bottom left are three people on what appears to be a farm. There are two chickens, a sheep and a cow. Three fruit trees are drawn on the left border of the farm within their own fenced area, so it looks to be an orchard. A garden, indicated by green dots, extends along the front of the farm. A road traverses the top left corner of the page. The words “my place”, written in small orange text and underlined, are in the very bottom left corner, below the farm.

**Place-story Map #17**

This place story map is symbolic, with two semi-circle tree-like symbols placed on their sides to form an unclosed circle. There are no other images or text. The two thin, open semi-circle outlines at the top centre and bottom centre of the page are drawn as if the circle has been pulled apart. These two semi-circles are coloured dark red. On the top semi-circle four trees are drawn, sprouting outwards towards the top of the page. They have dark red trunks and some green foliage. The bottom semi-circle has a tree-like shape bursting from its right end. This appears to be branches, and some green and red dots on the branch ends possibly indicate fruit.