

The Winston Churchill Memorial Trust Of Australia

Report by Andrew Best

2008 Churchill Fellow

A study of the enhancement of student engagement through Environmental Education programs.

I understand that the Churchill Trust may publish this report, either in hard copy or on the internet or both, and consent to such publication.

I indemnify the Churchill Trust against any loss, costs or damages it may suffer arising out of any claim or proceedings made against the Trust in respect of or arising out of the publication of any report submitted to the Trust and which the Trust places on a website for access over the internet.

I also warrant that my Final Report is original and does not infringe the copyright of any person, or contain anything which is, or the incorporation of which into the Final Report is, actionable for defamation, a breach of any privacy law or obligation, breach of confidence, contempt of court, passing-off or contravention of any other private right of any law.

Signed Dated

INDEX

	<u>Page</u>
INTRODUCTION	3
EXECUTIVE SUMMARY	4
FELLOWSHIP PROGRAM	5
HOW ACCREDITATION ENHANCES THE ENVIRONMENTAL SUSTAINABILITY OF A SCHOOL	6
SAVING OUR CHILDREN FROM NATURE DEFICIT DISORDER	10
ENVIRONMENTAL EDUCATION AS A KEY ELEMENT IN ACHIEVING SUCCESSFUL LEARNING OUTCOMES FOR INDIGENOUS STUDENTS	11
CONCLUSIONS	14
RECOMMENDATIONS	14
IMPLEMENTATION AND DISSEMINATION	15

INTRODUCTION

The fellowship provided me with the opportunity to visit England and Scotland in the United Kingdom, and New York State and Alaska in the United States of America. The purpose of the trip was to study the impact of Environmental Education in engaging children in the learning process. I was able to examine how programs were managed at national level, and how they linked into an international body. The engagement of students with challenging behaviours and Indigenous students was of particular interest to me.

The support of The Winston Churchill Memorial Trust Of Australia in making this study trip a reality will always be appreciated and highly valued. I hope that my study and subsequent actions will repay the faith that they have shown in supporting my project.

I would also like to extend my thanks to all of those people in the United Kingdom and United States of America who generously shared their knowledge and expertise with me, and in many cases provided me with a home away from home.

Finally I must thank my friends and family in Australia who encouraged me to undertake this study.

EXECUTIVE SUMMARY

Andrew Best

13 Coachwood Crescent Picton, NSW 2571

Position: Principal Leumeah Public School

Phone: 0246255245 (work) 0402302956 (mobile)

Email: andy.best@det.nsw.edu.au

The fellowship was undertaken between the 1st September and the 5th October 2008. There were three main goals for the fellowship:

1. To equip the next generation of children with the necessary skills required to overcome the challenges that lie ahead of them.
2. To provide innovative learning programs for Aboriginal students and enhance their performance in literacy and numeracy.
3. To re-engage students with challenging behaviours in the learning process using authentic experiences in quality learning environments.

I travelled to the United Kingdom and the United States of America to study programs in Environmental Education that would provide me with new insights, knowledge and skills to assist me with my goals. I was able to study program management at the national level in England and Scotland, and gain insights of how these programs impacted at the school level in three different schools in Scotland. In New York State I was able to attend a lecture and workshop on the theme of "Saving Our Children From Nature Deficit Disorder" at Cornell University and also had the opportunity to gain ideas from practitioners in the field and meet with a Native American Professor with a wealth of experience in Indigenous Studies. I then travelled to Fairbanks Alaska to spend some time at a high school with an enrolment of more than 90% Native American students.

Highlights

- Visiting the English national office of Eco-Schools in Wigan and the Scottish National Office in Stirling.
- Being a member of an assessment team at a school in Aberdeenshire that was seeking the top level award of a green flag with Eco-Schools. Interviewing members of three different Eco-School communities in Scotland.
- Meeting author Richard Louv, and being invited to attend a workshop with him and leading practitioners in Environmental Education from around the USA. Interviewing Professor Jane Mt Pleasant an expert in Indigenous Studies.
- Being a member of the learning community of Effie Kokrine Charter School in Fairbanks, Alaska.

Recommendations

- Australian schools should have access to the Eco-Schools program accessible through the international organisation, Foundation for Environmental Education (FEE).
- State, territory and federal education systems should promote Environmental Education as an excellent vehicle for the provision of authentic learning experiences of high intellectual quality across all key learning areas.
- Pilot programs should be developed and trialled as action research projects in Quality Teaching for Aboriginal students in conjunction with elders from their communities, utilising a values framework based on traditional, cultural values and spiritual connection to the land. Similar projects should be trialled for students with challenging behaviours, who are currently disengaged from learning.

Implementation and Dissemination

- The principles learned will be shared in presentation format across a variety of forums, including Principals Association, Sustainable Schools Networks and Environmental Education Conferences.
- An action research program is being developed with a school in South Western Sydney.
- A meeting is being organised with members of the Australian Sustainable Schools Initiative (AuSSI) to examine the feasibility of initiating the Eco-Schools Program in Australia.

Fellowship Programme

September 1

- Departed Sydney

September 2-6

- Arrived in Manchester England
- Visited English Head Quarters of Eco Schools at Wigan and met with Emma Jones, Line Hart and Chantel Brown

September 7-16

- Travelled to Udny Ellon, Aberdeenshire, Scotland
- Visited Durriss School, Kellands School and Macduff School
- Visited Forvoe Nature Centre
- Visited Bennachie Centre

September 17

- Travelled to Stirling and visited Scottish Head Quarters of Eco Schools
- Met with Kate Campbell and her team

September 18-21

- Travelled to Glasgow via Edinburgh
- Visited Glasgow Botanic Gardens

September 22

- Departed United Kingdom and travelled to United States

September 23-25

- Arrived in Ithaca, New York State
- Visited Ithaca Children's Garden and met with board member, education officer and site coordinator
- Visited Cornell University and attended a practitioners workshop with author Richard Louv
- Attended Cornell Plantations Fall Lecture Series to hear Richard Louv's lecture – Saving Our Children From Nature Deficit Disorder
- Met with Professor Jane Mt Pleasant to discuss Indigenous Perspectives to Environmental Education
- Visited Cornell Lab of Ornithology
- Visited Elizabeth Ann Clune Montessori School Nature Area, and Beverly J. Martin Elementary School after hours school care centre

September 26-27

- Departed New York State and travelled to Fairbanks, Alaska

September 27-October 2

- Visited Effie Kokrine Charter School and met with principal, Linda Evans and many teachers, students and parents.

October 3-5

- Departed United States to return home

How Accreditation Enhances The Environmental Sustainability Of A School

National accreditation systems for schools have several benefits. At the school level there is a high level of prestige that goes with the award of a green flag. The ability to work through an award program which relies on self-assessment by the school for the bronze and silver awards, and an external assessment for the top level award of a green flag, is very beneficial for schools. It provides structure and links environmental education as a perspective that permeates all key learning areas. Eco-Schools in Scotland have produced a document, *Eco-Schools and the Journey To Excellence*. This book guides schools in linking environmental education initiatives to all ten of the “Dimensions of Excellence” that have been developed for schools by the government. This enables schools in the Eco-Schools Program to move towards meeting the accountabilities that have been set by their system.

The requirement of having an Eco Code to be in the Eco-Schools Program provides schools with a planning framework as they move to higher levels of environmental sustainability. Schools also gained valuable assistance and guidance with the provision of standardised audit materials for environmental audits, which assessed current practice and established future action plans in areas such as waste minimisation and energy use.

I visited Durriss School in Aberdeenshire as a member of the assessment team, with Kate Campbell, the National Manager of Eco-Schools in Scotland, to assess the school for the award of Green Flag. The school was successful in its bid. When asked, “How has the experience of Eco-Schools benefited your school?” the following responses were given:

Primary Grades 1-4 said:

We are trying to save the world.

It makes us happy and feels good because we are helping.

There is a lot more wildlife around the school.

School is more attractive.

Durriss looks better.

We have a litter free school.

We are more active.

We like doing eco things.

We might get a green flag.

Primary Grades 5-7 said:

We are saving water.

We are bringing back, or encouraging more mini-beasts and birds.

We are composting leftovers-not wasting food-reducing landfill waste.

We are saving energy through switching off lights.

We are recycling more at school and at home.

Some children have encouraged parents to install composters at home too.

We are encouraging people to have water saving bags in their toilets at home.

We are blocking plastic bags-using bags made from canvas.

We feel good because we are doing all we can to make things better for the world.



Nature corner at Durriss School

System wide benefits for schools were obvious and easy to identify. The benefits for individual students were also very evident in the schools that I visited. At Kellands School, in Inverurie, I interviewed many staff members and students. Kellands School has a silver award from Eco-Schools and is working towards its green flag.

A special unit exists at the school for students with dyslexia. An eleven year old boy in that class had this to say, “I came to Kellands a year ago. I have dyslexia and at my other school I didn’t like to join in anything. I was getting into a lot of trouble and I was about to be asked to leave the school. I was lucky to be offered a place in this class and when I came here we did lots of work outside and it was fun and interesting. At Kellands I join in everything, and now I can read.” The class teacher put all of her students through an environmental award program, set up by the John Muir Trust, at the time of their enrolment. She then used the experiences gained through the program as a foundation for learning in Literacy. Every child in the class had a similar story. I interviewed a ten year old from a mainstream class, who was a member of the school eco committee. I asked her what she enjoyed about being a member of the committee, and what had been her best achievement. She responded by saying, “It’s good to be on the eco committee because it makes learning at school more real. The best thing that we have done is build the outdoor classroom. We had a design competition for the students. In maths we got to design plans, and we had to measure them to scale. We had to go outside and measure the area, and we had to work out the cost of the materials and how much we would need. The best design was chosen and we built the classroom. We did lots of maths but it was real, not like doing it in a text book which is boring.” Teachers interviewed gave similar responses. Christine, a senior primary teacher at Kellands saw an overall improvement of student performance as a result of the Eco-Schools program. She believed that levels of student engagement were higher as the teaching content and context had greater relevance to the students. Marianne a primary teacher at Macduff School, which had won two Green Flags, and was working towards its third, recounted how students with learning difficulties in her class had responded well to the learning involved in planning and building a greenhouse from recycled plastic bottles. She commented on how the learning gave the children a sense of purpose.



Teachers from both schools acknowledged the role of Eco-Schools in promoting “Active Children,” as healthy lifestyle had become a system priority.

The new Scottish Curriculum for Excellence states: The purposes of the curriculum 3-18 are to enable all young people to become successful learners, confident individuals, responsible citizens and effective contributors. All teachers interviewed believed that belonging to the Eco-Schools program allowed them to plan across all sections of the curriculum in a meaningful way. They

believed that they were able to build authentic learning experiences into all key learning areas, and that this had a very positive impact upon levels of student engagement in learning. Students developed far greater ownership of their learning. An example given from Kellands School was how children led and developed a playground behaviour improvement program. A survey was developed by the students. All children were given post-it notes with happy and sad faces on them. They placed these notes on an enlarged plan of the school, and identified areas where children felt happy/sad, safe/unsafe. They identified areas that were the problem and designed a zoned playground, with different types of areas, catering for different needs. Playground behaviour problems diminished greatly as a result, and students were empowered to work on and in their environment. The new areas developed were planned by the children as part of the curriculum, and included a fitness trail, passive garden areas and sports/games areas.

Paul Adamson, deputy principal at Macduff School, believed that the Eco-Schools program provided teachers with opportunities to further develop their professional judgement, as there was a higher level of professional respect involved in the delivery of the new Curriculum for Excellence. He believed that it assisted in a major paradigm shift as teachers developed deeply engaging curriculum units in a meaningful and practically based context. He also emphasised the social context of the curriculum with a strong focus on relationship development, which moved away from students being passive recipients in the learning process. Eco-Schools provided a national framework which allowed for greater consistency and moderation of curriculum delivery across schools in the system, and at the same time allowed for a healthy competitiveness amongst schools as they strived to work through the three levels of accreditation.

Colin MacLean, the principal of Kellands School, reinforced these beliefs. He saw that there was great benefit for the system through Eco-Schools as the program provided everyone with a list of accessible criteria, with examples, and that this allowed schools to forward plan with consistency and clarity. At the school level he had integrated the Eco-Schools program into his school parliament, which greatly enhanced student ownership of learning, and empowerment of the students, in line with curriculum expectations. He also commented on the value of groups of schools working together to develop a local curriculum in the context of the broad national guidelines, and how Eco-Schools membership facilitated this.

Mr MacLean noted that Eco-School membership was mandatory in most parts of Scotland. He believed that this was a positive measure, as it led to more purposeful management plans, authentic curriculum and higher levels of student engagement in learning. Schools were required to report on how the children were involved in the program as part of their annual review. There were also clear measures at a national level for staff training in Sustainability. Schools could develop “Evidence Books” to support their accreditation. He believed that working through the levels of accreditation in the Eco-Schools program enhanced the sustainability of the school, helped to maintain a sense of urgency for sustainable practices, and kept schools focused.

At the national level in Scotland the program is managed in conjunction with Keep Scotland Beautiful. The national office is situated in Stirling. There are 9 people employed in the national office. The Scottish government funds the program at a cost of approximately 400,000 pounds per year, and the program overall receives about 475,000 pounds in funding annually. It is interesting to note that Scotland has approximately 3,500 educational institutions, and that since government funding was introduced the registration for Eco-Schools is above 90%, compared to about 40% in England where the government does not fund the program. All members of the Scottish Parliament support the scheme, and it has been adopted as a performance indicator for schools. There are three award levels in schools in the United Kingdom. This is not the case for other nation members. The first two levels, Bronze and Silver, are gained through self-assessment, and the top level, the Green Flag, is achieved through external assessment through the national office. Currently in Scotland a school achieves permanent Green Flag status if it wins four Green Flags. This is not the case in England, where schools must continually renew that status every two years. Scotland is reviewing this practice and may adopt the English model. A flexible approach with topics selection is used in Scotland. Ireland is more prescriptive in aligning specific topics for each Green Flag award.

There is a seven step process involved in working towards an award:

1. Eco-Schools Committee
2. Review

3. Action Plan
4. Monitoring and Evaluation
5. Curriculum Work
6. Informing and Involving
7. Eco Code

The program has seven core topics which are set by the Federation for Environmental Education, but in Scotland they have nine topics:

1. Litter
2. School Grounds
3. Energy
4. Water
5. Health and Well-Being
6. Transport
7. Waste Minimisation
8. Biodiversity
9. Sustaining Our World

Three full-time employees from the national office in Scotland are involved in assessment, and they work with a network of volunteer assessors across the country. They also liaise with 32 local education authorities, some of which have a designated Eco-Schools Officer, and provide training and network meetings where best practice can be shared.

Membership of Eco-Schools in both England and Scotland has been taken up predominantly by primary schools in the government systems. Some private school interest is being shown now in Scotland. Secondary schools have not been as quick to come on board due to the faculty based structure of their schools. Scotland has been proactive in this regard and has employed a Secondary Schools Officer to assist high schools in becoming Eco-Schools.

All schools entering the program in Scotland receive support which includes:

- Resource Handbook/Guide
- DVD
- Website Support www.ecoschoolsscotland.org
- Monthly Bulletin/Quarterly Newsletter
- A Grant of 250 Pounds (after winning their first award)

There is a cost involved for countries which sign up to Eco-Schools payable to the Federation for Environmental Education. This cost involves an annual fee and a levy for each school that registers. The total cost for Scotland was covered by the national office and was 7,500 Euros.



Green Flags on display at Macduff School

Saving Our Children from Nature Deficit Disorder

I visited Cornell University in New York State on the second leg of my journey. I went there specifically to attend a lecture by author, Richard Louv. Richard wrote the book, *The Last Child in the Woods – Saving our Children from Nature Deficit Disorder*. I was fortunate enough to be invited to a small group workshop with Richard and about twenty practitioners of environmental education from around the USA. This workshop took the form of a question and answer session, where we were each allowed to pose one question. That evening I attended a sell out lecture with over six hundred others to hear Richard speak. This lecture was part of the celebrations for “National Take a Child Outside Week.” Richard is also the Chairman of Children and Nature Network www.childrenandnature.org which is building a movement to reconnect children and nature.

I asked the following: *Are there any Environmental Education programs that have been identified as best practices in re-engaging students with challenging behaviours in the learning process?* The answer was that there were many programs across America and the world that served this purpose, and that different programs worked in different contexts. He referred to the Children and Nature Network website which has many stories and links. He also stressed the need to “bring people out of silos” and develop a larger vision with regional campaigns launching many programs. He also urged more experimentation in this field.

Richard’s basic premise is “For eons human beings spent most of their formative years in nature. But within the space of a few decades, the way children understand and experience nature has changed radically. Healing the broken bond between our young and nature is in everyone’s self-interest, not only because aesthetics or justice demand it, but also because our mental, physical and spiritual health depend upon it.” I came away from the day with many insights including the following:

- “Any culture will fail if it can’t paint a picture of a world that people want to go to.” (Martin Luther King Junior)
- This issue is fundamental and has the potential to bring us together. It is intrinsically hopeful. Everyone old enough has a special place in nature, and many people go to the woods in their hearts. We need to ask, “Will future generations have a future place to go to?” The issue is about the health of our children and the health of the Earth.
- We need to work against the extinction of experience and place a strong emphasis on how great nature is for children’s development emotionally, physically and spiritually. There was a thought that we need to move beyond sustainability, which suggests stasis, because we are not only put here to survive, but also to create, as we build a new civilisation.
- Brain research indicates that there has been a reduction of “Executive Function”, with present day seven year olds having the executive function of five year olds from the 1940’s. Executive function develops with imaginary play in nature.
- The United States government has just proclaimed the “No Child Left Inside Act” and will be funding states to help get nature back into classrooms. Interviews with senators from both sides of parliament showed that everyone wanted to recreate the special places that they had as children.
- Technology should be embraced and utilised in creative ways to engage children in nature. We shouldn’t discount technology or the need for productivity, but rather incorporate it. Computers come from the Earth. It’s all one. There is a need for “Biophilic” design, and a need to go beyond energy efficiency, and look at links to productivity. A study was cited where schools with natural daylight had improved test results. A paradigm shift is required regarding consumerism, so that we can create something that we’ve never had before. People aren’t motivated by despair, so we shouldn’t demonise technology, as this can distract us from deeper issues such as over regulation of childhood or fear.
- Citizen Science has a significant role. Connecting children with nature fosters that sense of protecting endangered species and moves away from Ecophobia. There should be an emphasis on fun not fear. There is also a valuable place for structuring of unstructured activity and play, where we sometimes need to stand back. Strong links have been identified

between brain architectural development and nature, and there have also been studies on teacher well-being being enhanced by working outside. Children on nature excursions have felt better on their return than when they went out due to a heightening of sensory awareness.

Richard Louv is developing a three ring approach to effectively dealing with the issues raised. His rings are Programs, Volunteers and Social Change. He argues that Programs are the least effective solution as they are limited by budgets. Volunteer Work is a little better, although it can be limited by budgets and tension between paid and volunteer workers. The best of these programs are able to transcend that problem. He advocates Social Change as being most effective and cites an example of Nature Family Play Days. A father wanted his daughters to be able to explore the local creek but was unable to because the creek ran through the private property of his neighbours. He asked himself what it would take to ask the owners of the homes to let his girls play along the creek. He eventually overcame this fear and asked. This led to Nature Family Play Days, and Nature Family Clubs, which had no funding requirements and hence no limitations. He also made reference to groups that formed with single parents who were unsure of how to teach their children about nature, coming together to form clubs where they were able to help each other. Social groupings such as these have tremendous potential.



Meeting with author of Last Child in the Woods and Chairman, Children and Nature Foundation, Richard Louv.

The rest of my time in Ithaca was productive with visits to the Ithaca Children's Garden where I met with staff to discuss their school links programs and gain an insight to new ways of engaging children through some unique gardening programs. I also visited an after school care program at Beverly J. Martin Elementary School and interviewed a child from the infants department. He had enjoyed being involved in designing a garden and growing food. The children were eating bruschetta prepared with home grown ingredients. The level of design and the science involved in the gardening required a high level of intellectual engagement on behalf of the student. I also visited the outdoor area of the Elizabeth Ann Clune Montessori School and spoke with a parent. It was interesting to note the areas that had been set aside for free play and how they had been utilised imaginatively by the students with shelters made from woven natural materials.

Environmental Education as a Key Element in Achieving Successful Learning Outcomes for Indigenous Students

I had the pleasure of meeting with Professor Jane Mt Pleasant at Cornell University in Ithaca. Jane specialises in Soil Sciences, but had been the head of the Native American Studies Program at Cornell until recently. Jane is a Native American and she provided me with some valuable insights into student engagement.

She explained that Native Americans have a spiritual connection with the land and a highly developed sense of place in much the same way as Australian Aboriginal people. This made Environmental Education an excellent vehicle for learning. She cautioned against programs that were tokenistic and tried to steer clear of programs that were just about "beads and feathers." She

graciously shared aspects of her own learning journey with me and the two hour interview that we had scheduled seemed to be over in minutes. Her advice to me was to examine what was happening in Alaska as there were some excellent programs in that state. This was very encouraging as I explained that I was heading North to Alaska the very next day. I hope to maintain contact with Professor Mt Pleasant and gain from her wisdom as I explore program development in Australia. I travelled to Fairbanks, Alaska and spent three days at Effie Kokrine Charter School. This school was a school of choice for the students. More than ninety percent of students were Native American with the vast majority being Athabascan Indian.

The schools vision, mission and goals were clearly defined and are as follows:

Vision

Students will learn through their individual learning styles and develop core values to guide their lives. When they graduate, they will leave as successful students, empowered, reflective, and grounded in tradition/culture.

Mission

Our mission is to empower students through understanding and utilizing individual learning styles, reflection through portfolios, and grounding in tradition/culture through blending western and traditional ways of knowing in forming our world view.

Goals

1. 100% of students in the junior and senior classes be involved in taking college classes in their area of interest.
2. 80% of graduates from Effie Kokrine Charter School will be students who began attending school at EKCS in the 7th grade.
3. 80 % of students taking the HSGQE at Effie Kokrine Charter School will be proficient in reading, writing and math.
4. 90% of students enrolled at Effie Kokrine Charter School will be, on any given day, present and in class on time.
5. 100% of students at Effie Kokrine Charter School will have a clearly defined and developed life plan in place.

The curriculum of the school was planned thematically for the year around Numeracy, Language, Culture and Literacy and every grade in the school covered the same topic but at different levels through a spiralling content. All subjects were built on an Athabascan Values Framework (*in italics*)

SUBSISTENCE/HEALTH/WELLNESS *Sharing/Providing for Family/Compassion/Love/Dignity*

FAMILY/TRIBE/COMMUNITY *Respect for Elders/Love for Children/Responsibility/Unity*

LANGUAGE/CULTURAL EXPRESSION *Knowledge of Language/Wisdom/Spirituality*

ENERGY/ECOLOGY/TECHNOLOGY *Respect for Nature/Hard Work/Self Sufficiency*

LIVING IN PLACE/ SURVIVAL *Honoring Our Ancestors/Honesty/Humility/Humour*

THINK GLOBALLY/ACT LOCALLY *Respect for Others/Peace*

EXPLORING HORIZONS *Caring/Cooperation/Endurance*

On my first day at the school I sat in on a class where students were presenting assessment tasks as a culmination activity for their unit on Subsistence. A young girl was reading a procedure to the class that she had written on "How to Disembowel a Moose." She had detailed knowledge and when I questioned the students, many class members had killed their first moose. They explained the traditional laws that must be followed and it was obvious that they had developed the values of sharing, providing for family, compassion and love and dignity that underpinned this unit of work. Later in the day the students went out to the snow covered vegetable garden to weed. They had harvested the crop the week before as part of the unit and had used some of the food at a community "Potluck" in the school gymnasium. Environmental Education has a strong connection with subsistence lifestyle and this was evident in the assessment tasks presented by the other students on topics such as fishing and caribou hunting. The children were very much aware of the balance in nature and the need to preserve it.

Lessons were based upon authentic learning experiences. I learnt how to split spruce roots for basket weaving and canoe making. Year 11 students had subjects such as Boat/Snow Machine Maintenance and Arctic Biology, and Year 10 students studied Climate Change in the Sub-Arctic,

and Traditional Shelter and Clothing. Year 9 were engaged in studies of Survival in the Boreal Forest and Migration and Sense of Place.

Elders were welcome in the school and parents came and went at will as a result of the school's open door policy. I interviewed a parent of a girl who told me that her daughter would have been lost in the local high school and that Effie Kokrine was a safe haven for her. She said that the parents valued the school because they believed that the school valued them.

I interviewed a student who had only recently enrolled in the school from interstate, or the "Lower 48" as the other states are referred to in Alaska. He told me that he really valued this school as it was good to study Indigenous Culture and Values and that it made the learning more relevant to him.

The school principal, Mrs Linda Evans, who is Athabascan, felt that the school was managing the thematic approach to the curriculum really well in the Junior High School as the class structure lent itself to a thematic approach to learning. She believed that this was more difficult in the Senior High School where teachers had been trained with traditional secondary pedagogy. This observation was similar in British Schools and indeed in Australia. Senior High teachers are very much driven by external testing agendas and this tends to limit their ability to integrate learning across several subject areas. I was interested to hear from a Native American Math teacher in the Senior High School who said that he was keen to develop a more integrated approach which incorporated Learning Styles as set out in the school's mission. I interviewed an English teacher, who felt that this was too difficult, yet when I observed his lesson he had integrated traditional culture and environmental education brilliantly.

All of the teachers in the Junior High School were Native American and half of the Senior High School teachers were also. They were highly qualified with several of the teachers having qualifications in Learning Styles and several teachers undertaking studies in an Advanced Learning Styles course. The intellectual quality of the work was rich and students were highly engaged. It is interesting to note that many of the students came from challenging family backgrounds, but rose above these challenges in the school environment. Children had to sit state exams even though their curriculum was different. The school had set grade level equivalences into their curriculum to ensure that state expectations and standards could be maintained.

The principal had only been appointed a few weeks before my visit. She is committed to the school's mission and is planning to strengthen the school's ability to fulfil it through well planned professional learning for the staff. She has a very demanding role as she is the only administrative staff member on the teaching staff and doesn't have any other members of staff in school leadership positions. She is working hard to strengthen the collective vision of the staff.

I left the school with a firm belief that Environmental Education can provide authentic learning experiences for all students, and is a particularly engaging vehicle for Indigenous Students. I can also see great value in connecting students in from Australia with students from different cultural backgrounds using the internet to enhance their understanding of the world as a whole.

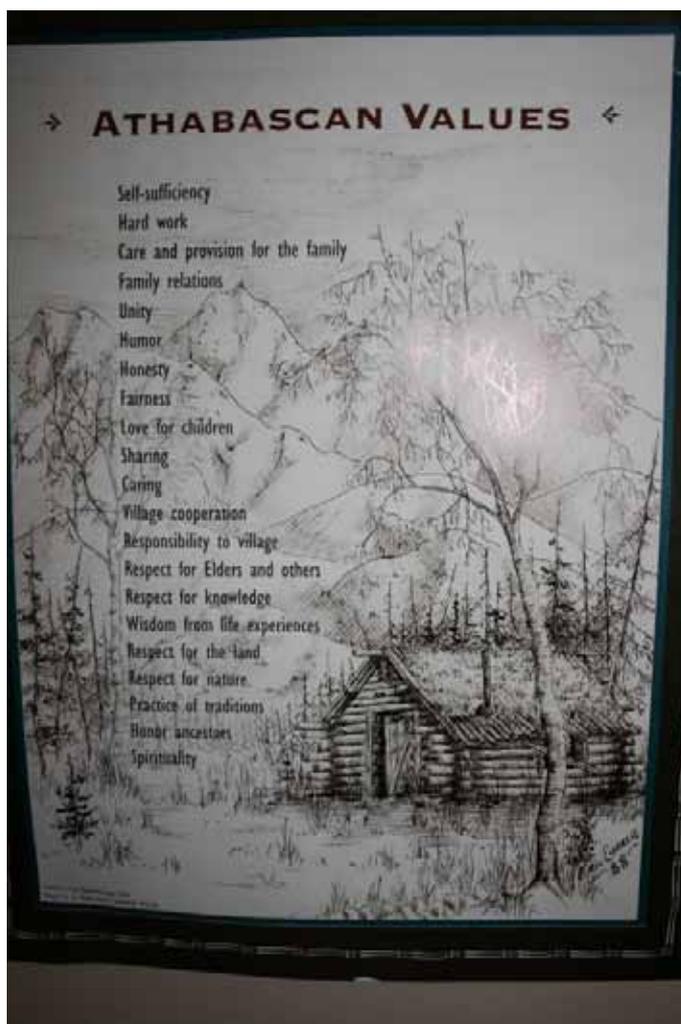


Year 7 students and their teacher

Conclusions

My fellowship study has strongly affirmed my belief that:

- Levels of Accreditation can strongly enhance the sustainability of a school. National systems that are linked to an international program gain benefits for schools and individual students with higher levels of engagement in learning, more meaningful and authentic curriculum and better strategic planning for sustainability.
- Environmental Education is an excellent vehicle for engaging, and re-engaging students in the learning process. Connecting students to nature and helping them to develop a sense of place has a beneficial effect on their well-being.
- Environmental Education can be used as a key element in achieving successful learning outcomes for Indigenous Students. This needs to be done by building upon a culturally sensitive and relevant values framework which draws heavily on Native Wisdom and respect of Culture.



Recommendations

- Australian schools should have access to the Eco-Schools program accessible through the international organisation, Foundation for Environmental Education (FEE).
- State, territory and federal education systems should promote Environmental Education as an excellent vehicle for the provision of authentic learning experiences of high intellectual quality across all key learning areas.
- Pilot programs should be developed and trialled as action research projects in Quality Teaching for Aboriginal students in conjunction with elders from their communities, utilising a values framework based on traditional, cultural values and spiritual connection to the land. Similar projects should be trialled for students with challenging behaviours, who are currently disengaged from learning.

Implementation and Dissemination

- The principles learned will be shared in presentation format across a variety of forums, including Principals Association, Sustainable Schools Networks and Environmental Education Conferences.
- An action research program is being developed with a school in South Western Sydney. This will involve the development of an environmental education curriculum unit which will be taught in a school with a significant Aboriginal student population.
- A meeting is being organised with members of the Australian Sustainable Schools Initiative (AuSSI) to examine the feasibility of initiating the Eco-Schools Program in Australia. Meetings will also be held with officers from the NSW Department of Education and Training for the same purpose. A position paper consideration has been presented to the Futures Group of the NSW Primary Principals Association and a draft position paper will be written and presented to the Australian Primary Principals Association for consideration. Letters and copies of this report will also be sent to relevant state and federal politicians for consideration.

