

Sabbatical Report

centre of environmental excellence

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Submitted: 2015

Acknowledgements

I would like to acknowledge the support of the Fiordland College Board of Trustees in approving my leave.

I would also like to acknowledge the following New Zealand organisations and individuals who assisted me in my research:

- The Ministry of Education for generously financing this sabbatical
- My Deputy Principal, whose personal and professional support went well beyond the call of duty.
- Staff who ‘acted up’ in my absence and who ensured the Senior Leadership Team could function fully.
- Fellow staff members who simply carried on with their work and ensured that the students were getting the best teaching possible.
- Nicholas Humphries – 2014 Head Boy of Fiordland College – for his take on what an Environmental school should look like

I would like to make a special thank you to my Norwegian and American contacts who willingly gave their time and expertise to ensure that I had a broad picture of what is happening in the Norwegian and American education systems with regards to environmental issues. To the following people and institutions I express my thanks and gratitude:

- Miss Nancy Crowe – Teacher Sheridan High School – who made several introductions for me to Wyoming High Schools.
- Project Learning Tree, Sundance Wyoming
- The Principal and staff of Arvada-Claremont High School
- The Environmental Science Teachers of Big Horn High School
- The Principal and staff of Buffalo High School, Buffalo Wyoming
- Science Teachers of Clear Creek Middle School, Buffalo, Wyoming
- The Principal and staff of Sheridan High School
- The Principal and staff of Sheridan Junior High School
- The Environmental Science Teachers of Tongue River High School
- The Sheridan Community College, Spear-O-Wigwam Coordinators
- Mr Harvey and Mrs Joan Crowe, who spent hours taxiing me all around Wyoming.
- Mrs Tanya Callow, who acted as my interpreter and Personal Assistant while I was in Norway. Tanya contacted people on my behalf, translated questions, emailed contacts and ran me around the country for the duration of my visit.
- Journalists with the Norwegian Union Magazine – “Fag Bladet”
- Staff of Teach First Norway who talked me through the work that Teach First Norway is doing to encourage Masters and PhD graduates into teaching in Norway.
- The Principal, Deputy Principal and staff of Vøyenenga School, Oslo
- Staff at Moss Steiner School

Title: A Centre of Environmental Excellence

Purpose

The Vision Statement of Fiordland College is: *To be recognised as an inspiring, innovative learning environment and a centre of environmental excellence, where staff and students thrive in an atmosphere of motivation, co-operation and achievement – a place for all to thrive.*

Much work has been done at Fiordland College in the past to ensure that the programmes of work are indeed innovative. Much work has been done to ensure that the school is *a place where all can thrive*. However, while a lot of thought has also been given to things environmental a) in the work of Kids Restore the Kepler, and b) in terms of programmes of work offered within the Fiordland College curriculum, little real thought had been given, at this time, to what a centre of environmental excellence physically looks like. The purpose of this study, therefore, was to explore possibilities around how a “centre of environmental excellence” might actually appear.

The intention of the sabbatical was to consider best practice in two regions overseas particularly at secondary level, where schools have been recognised, and have won community confidence, for special programmes of learning that they have undertaken e.g. environmental, Outdoor Education and academic enhancement. What safeguards can schools put in place to ensure these programmes are embedded in the culture of the individual institutions involved?

Executive Summary

Fiordland College is an Environmental school with a Bronze status. It is also heavily involved in the Air New Zealand Kids Restore programme with a particular focus on the Kepler – Kids Restore the Kepler (KRTK). This, along with its summer and winter camp programmes, is what gives Fiordland College its ‘special character.’ However, the success of the KRTK programme in our school is heavily reliant on the continued external support of an outside provider, in this instance Kids Restore New Zealand, the Fiordland Conservation Trust and the Department of Conservation, and on the enthusiasm and energy of individual teachers. I was interested in visiting other schools around the world, which offer ‘special programmes’, to see how they embed them into the culture of their schools so that they become self-sustaining and self-fulfilling. I wanted to observe ways other schools safeguard the ‘special’ initiatives of their individual schools.

The initial intention was to first visit four schools in Wyoming, United States of America, plus the environmental focus group – Project Learning Tree (PLT), which has a base in Sundance, Wyoming. Then to travel to Norway and to visit two or three schools there as well as spend some time looking at the work being done by Teach First Norway. This is not how things transpired. Personal circumstances dictated that I completed this report over a one-year period, as opposed to the initial expectation of completion within one term, and that I reverse the order in which I visited the countries mentioned.

Research Findings – American Examples

Project Learning Tree

Project Learning Tree (PLT) is an award-winning environmental education programme designed for teachers and other educators, parents, and community leaders working with



youth from preschool through to seniors in high school. At PLT, the goal is to teach students how to think, not what to think, about complex environmental issues. Recognised as a leader in environmental education for more than 35 years, PLT enhances critical thinking, problem solving, and effective decision-making skills. PLT materials are multi-disciplinary and aligned with state and national education standards.

PLT contend that when environmental education and outdoor learning components are integrated into curricula, student achievement increases, including test scores - particularly in Science and Mathematics. PLT inspires students, teachers, families, and volunteers to take personal responsibility for improving the environment at their school, at home, and in their community. The goal is for students to "learn by doing."

PLT's Green Schools programme provides a set of tools for students to analyse data and design a student-driven project to cut school costs, improve student health and nutrition, teach core subjects, enable civic engagement, and build skills for careers of the future.

PLT's National Office is in Washington DC. It has offices in all states of the USA and a number in other countries around the world. In Wyoming, it operates as a non-profit organisation, having to manage its budget largely through grants and donations. Its budget is small (\$60,000). In many other states, PLT is under the umbrella of organisations such as the American Forest Foundation and Fish and Game.

In Wyoming, the PLT co-ordinator's work includes having oversight of a steering committee, running the occasional workshop, co-ordinating all workshops that take place in Wyoming (usually 10 per year), collating evaluation forms and processing workshop feedback, and writing grant applications. This person is employed for 80 hours per month. PLT is promoted through workshops. Teachers get the curriculum guides when they do the workshops. However, nationally there is a move towards going on-line and guides could well be available in this forum in the future. PLT provides curriculum resources and workbooks for classes from Early Childhood to Year 12, however, the uptake has been largely in Years 1-8, rather than in High School, where national curriculum pressures are much greater. If schools decide they do wish to use the PLT resources then the school is required to sign a Memorandum of Understanding with PLT. For PLT, the forest is used as a window on the world to teach environmental education.

Arvada-Clearmont High School

Arvada-Clearmont is what we would refer to as an Area School. It has 84 students, from Year 1 to Year 12 (equivalent to NZ Year 2 – 13), so all classes are very small. There are 35 students in the High School division. The school building is dug into the ground in order to aid heat retention. The classrooms encircle the gymnasium, which is the central space. The dining room (cooked lunches are provided at a fee for all students) is on one corridor. There is a large technology space (metal) where students produce significant pieces of work (outdoor furniture, garden ornaments, and property signs) in metal for resale. This is ranch country. The school caters for 'ranch' kids.

The real point of difference for this school is the 4-day week. I was given a copy of the timetable to consider. I spoke to all staff during the course of the day and they were unanimously in favour of this timetable. The week goes from Monday to Thursday. If there is a Monday holiday (e.g. Easter Monday) it will go from Tuesday to Friday. There are 9 periods per day. Period 1 begins at 8.00am. Eight periods are 50 minutes long with a 3 minute break between each to move from class to class. The 9th period is a Study Hall from 3.30 – 4.00pm. No teacher is teaching another class during this time. All students are working on areas where help is needed and all teachers are available to help. The day ends at 4.00pm. Teachers have 7 periods teaching per day and one preparation period. They do 8.00am – 4.00pm 144 days per year as opposed to 8.30 – 3.35 Mon-Thurs, 8.30 – 1.15 Fri for 180 days of the year. Teachers say that this timetable has meant a significant reduction in the amount of class time lost due to sports commitments. This is because they are firmly committed to no students being allowed out of class for other activities during the four days of school. All co-curricular activities take place on Friday or Saturday. I was informed there are a number of other schools also considering making this timetabling move.

Staff reported that they often come to school on Friday morning to do preparation and marking, that staff PD sometimes takes place on a Friday, that they spend long days at school 4 days per week (sometimes as much as 7.00am till 7.00pm) but that the pay-off is well worth it – they had time for their family commitments at the weekend. They also commented on the significant environmental savings they achieved. For example: fuel savings for school buses and reduced electricity and heating costs.

Big Horn High School

Big Horn High School is approximately 12 miles from Sheridan, Wyoming. The town of Big Horn has a population of 490. The High School caters for 120 students from Year 9 -12. It is housed on the top floor of a two-storey building. The Middle School (120 pupils Year 7/8) is situated on the bottom floor of the same complex. The Elementary School is on the same site but housed in an adjacent building. This is a relatively new complex, approximately 8 years old. The schools are situated at the foot of the Bighorn Mountains, which form a northwest-trending spur from the Rocky Mountains extending approximately 200 miles northward on the Great Plains.



This school is also operating a 4-day timetable. The timetable is the same each day of the week. This is typical of all the schools that I visited, whether they were running 4-day or 5-day timetables. As with all the schools I visited, environmental issues have been taken into account in the buildings themselves. Toilets are self-flushing, lighting is sensor controlled, double and triple glazing has been installed and recycling is evident in all classrooms. Data projectors and wifi are apparent in all areas of the school and all lessons are available to students through the student portal of the website. Many assignments are being submitted electronically. Big Horn High School also has its own waste water treatment facility.

In many ways this school is not unlike Fiordland College, both in its setting and in terms of its educational values. I spent time looking at a Junior/Senior (our Year 12/13) Environmental Education class. The student assignments were based on work in the Bighorn Mountains. The teachers are vibrantly passionate about what they are doing and willing to share resources. The first semester programme is based on water – including water monitoring from the mountains to the lake. The second semester programme centres on sustainable habitats for the large animals of the area – buffalo, elk, wolves, bears. It was carefully emphasised to me that the course is not for Advanced Placement credit. It is an Alternative Programme only available for High School Graduation, and is aimed more at the non-academic student than at the student who intends to go on to university study.

Buffalo High School

Buffalo High School is a school of 300 students from Year 9-12, situated in Buffalo, Wyoming (a town of around 5000 inhabitants). Its Mission Statement “guarantees a learning environment where every student grows every day in his or her overall well-being and academic achievement.” The Vision is for collaboration “with our communities to graduate every student with the information, confidence, responsibility, and skills to be prepared for college, career, and the workforce.”



Built in 2006, the new Buffalo High School is particularly well-resourced. It boasts two gymnasiums, an auditorium, two Art Rooms, two Music Rooms, and two large and modern technology areas (one metal and one wood).

Buffalo's special character is evident in their music, agricultural and technology programmes. The wood and metal technology areas are 'state of the art'. As part of their technology curriculum, students are annually building a low cost home for locals as well as completing other projects that are individually determined by the students – bumper bars for their vehicles, building a truck trailer, gates from the ranch being re-sized. Buffalo High School has a joint venture with the Community College much like our relationship with Telford, and SIT, except that the programmes are offered by the school staff at the school. This means they have access to funding they would not normally have access to for the purchase of machinery and other hardware. The school gets the equivalent College funding because they are teaching College credits. Students gain tertiary credit, while still in High School.

Clear Creek Middle School

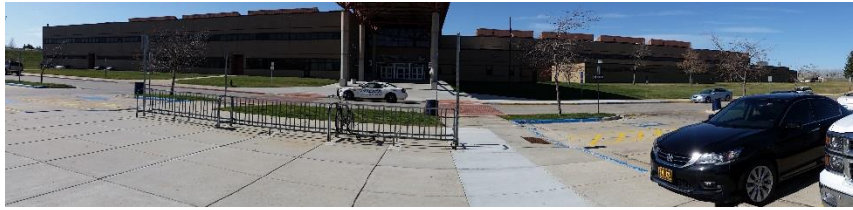
Clear Creek Middle School is a school of 246 students from Years 6-8 (ages 11,12,13). It is situated in Buffalo Wyoming. Once again the school is relatively new (built in the last 6 years), and the facilities absolutely first class. As with other schools I visited, this is attributed to the state's wealth in coal. There are approximately 80 students in each year level. Class sizes range from 10 to 21. The teachers indicated that classes are rarely over 20 in this school. The Environmental Science class is an Advanced Placement class and runs for one semester. Students are selected to this class on the basis of their results. They are top performing students. Over the course of the semester they look at 'real' issues in the district – fire ecology, wind power generation, water ecology. During the duration of the course students will go on a 3-day in-field study, which will look at changes in regeneration after forest fires in the region. At the time of the visit the class was considering blade design for wind generators – length, pitch, number of blades.

Clear Creek Middle School has links to O.R.E.O. – Outdoor Recreation Educational Opportunities. The O.R.E.O. programme is designed for teachers and adult youth leaders wanting to incorporate outdoor activities into their classrooms, curriculum, and programme environments. This is in conjunction with the State Game and Fish Department. Students from Clear Creek Middle School have the opportunity to be involved in a one-week programme with a range of outdoor education activities from kayaking, orienteering, astronomy, ice-fishing, skiing, archaeology, tramping. This is an extension of the school's commitment to the O.R.E.O. programme.

Particularly interesting is the Costa Rica Programme that the school is a part of. This has been running at Clear Creek Middle School for 16 years. Each year, 20 Year 8 students travel to Costa Rica for 11 days. The uptake on the programme is such that many students wishing to participate have to be turned away each year. Students are selected on the basis of their grades and on their behaviour. The programme is co-ordinated through EcoTeach (Washington). EcoTeach was founded in 1994 and specialises in providing educational tours to Costa Rica, Peru, Ecuador and the Galapagos Islands for student groups. Students participate and help with projects focused on conservation, ecology and community. They volunteer hours harvesting sea turtle eggs to save them from poachers, planting trees and conducting rainforest research. In spite of the cost involved, students I spoke to who had just returned from Costa Rica were adamant that it was a life-changing experience. This programme reflects the school values: Be Safe, Be Respectful, Be Responsible.

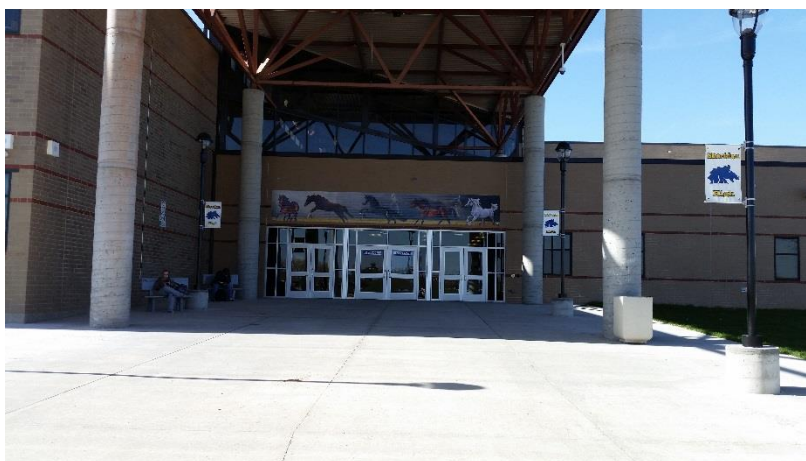
Sheridan High School

Sheridan High School has approximately 1000 students. There are two developments at Sheridan High School, which deserve some comment – the Year 9 Lunch programme and the Friday Early-Out programme.



The **Year 9 Lunch Programme** is similar to our Peer Support Programme, though somewhat more intense and run over a longer time period. For the duration of the first semester (18-20 weeks) Year 9 students do not have any free time during their lunch hour. Instead, this time is set aside to integrate students into the culture of the school. They first have lunch served in the cafeteria (approximately a half hour) and after this, work with senior students (equivalent to our Year 12/13) on a series of peer support type activities (approximately 15-20 minutes) every day from Monday to Thursday. The programme they are using is called the Link Boomerang Project. Junior and Senior (NZ Year 12/13) students apply to be student leaders on the programme and all Freshmen (Year 9) have to participate. The Assistant Principal has overview of the programme along with two teachers and one counsellor. Freshmen (Year 9) have a shortened lunch hour and then meet with their Link Student Leaders and also with a teacher who has oversight for one Link group. There are 15 students in a group.

The Assistant Principal explained that the transition to high school is a major event in the life of a young person, and yet very few substantial strategies for support exist in most High Schools in the United States. This school believes that High Schools do not have to just stand by and allow this rite of passage to happen to their Freshmen. At Sheridan High School they have put in place a structure where Freshmen get the necessary support to successfully navigate this transition and start their high school experience on a positive note. Some of the broad topics being covered are: Team and Climate Building, Organisation, Leadership, Facilitation and Teaching, Personal Development. There are copious resources to purchase and teachers involved do go through workshop training before embarking on the programme.



The **Friday Early-Out programme** is for students who have passing grades (A, B, C). On Friday, the school day is shortened. The final period ends at 1.35 as opposed to the normal finish time of 3.35pm. All those students with passing grades are free to leave school at this stage. All those who do not have passing grades are required

to stay behind until the official end of the school day. Teachers – none of whom have specific scheduled lessons, but all of whom are expected to be present – are then available to work with students who need extra help. While this programme was initiated as a way of helping failing students, the Senior Leadership Team commented that there has been a negative backlash to it from some students, in that those who stay behind feel as though they

are being punished, rather than helped. Also it was mentioned that some students will simply never attain a C, in spite of everyone's best efforts. This programme is presently under review and a new timetabling strategy was being discussed for 2016. This was likely to have 'extra help' sessions timetabled during the course of the day and the 'Early Out' programme being scrapped.

Sheridan Junior High School (SJHS)

This is a school of 700 students from Year 6-8, situated in Sheridan Wyoming. The Principal has been principal of the school for approximately 7 years. He was Assistant Principal at SJHS for one

becoming
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passionate about his school and is proud of the fact that this is the top performing Middle School in the State and that twice as many of his students are selected for All State Music as are from any other school. He talks of a great and very supportive community being the key to the school's success.

year prior to becoming Principal. A 50% staff turnover last seven years has largely been due to teacher retirements. The Principal believes that hiring his own staff is key to the school over the years. He is passionate about his school and is proud of the fact that this is the top performing Middle School in the State and that twice as many of his students are selected for All State Music as are from any other school. He talks of a great and very supportive community being the key to the school's success.

The Principal believes in the Positive Behaviour Intervention and Support Programme (PBIS), which is also known as School-wide PB4L (Positive Behaviour for Learning) in New Zealand. His school is very systematic in following this programme and in ensuring that it is explicitly taught in the school. There is a half hour dedicated session every week for the whole school, where school values are taught. The staff work very collaboratively together in all their planning and the Senior Leadership team are visible in all Professional Learning Communities within the school. Full staff meetings (there are 72 teaching staff) are held on a monthly basis to share developments between Learning Communities. The walls and ceilings of the building reflect the tone and direction of the school. Student artwork is exhibited widely. The positive atmosphere in the school was very evident as we walked the halls. There is a sense of order and respect and lots of infectious enthusiasm from the students.

At SJHS the values of the District – Be Safe, Be Respectful, and Be Responsible – are joined by Be Kind. Environmental considerations are an integral part of their value of Respect. The school practises recycling of paper, card, plastic and aluminium. The National Honour Society (a school club) students empty the bins in all classrooms every fortnight. The school has 1-1 chrome books for students at all three levels in the school. The Science curriculum has a heavy focus on Water Quality. While they do not call themselves an environmental school, they are concerned about matters of the environment. There is a move to reduce paper consumption.

SJHS boasts three gymnasiums, a weights room and an indoor swimming pool. Its buildings are approximately 10 years old.

Tongue River High School

Tongue River High School is situated in Dayton, Wyoming. Dayton is a community of 750 inhabitants and the High School has 130 Year 9–12 students. The elementary and middle schools for Tongue River are located in Ranchester, approximately 10 miles away. This is a 'blue collar' community. Tongue River is another school operating a 4-day timetable.



Once again teachers I spoke to in this school are committed to the 4-day week timetable. One teacher did say, however, that the downside is that if a student misses a day of school, then they miss one quarter of the programme as opposed to one fifth of the programme and that this could potentially mean significant gaps in learning for the student concerned.

An Environmental Science class is taught at senior level. As with Big Horn High School, this course is an alternative programme. At Tongue River, this course is only in its second year of offering, and because Tongue River is in the same school district (District #2) as Big Horn High School, both schools are supposed to be following the same programme. They do, but loosely. The course considers running water systems in four different areas on Tongue River from the Canyon to Ranchester, snow ecology, wild-life tracking and, because Wyoming is an energy state, energy sources – coal/fossil fuels, nuclear energy, and alternative energies. One of the primary teaching resources is the Aurum Science web page.

The school is six years old and was built with a 300 pupil capacity, so is very well resourced. Classes range in size from 4 -12 pupils.

There is also involvement by some staff in the Spear-O-Wigwam Summer School. One teacher runs six-day residential courses for junior/senior students in conjunction with the Game Department and Forest Service through this facility. This year, they will be employing the services of a Geophysicist working on measuring underground water. The courses offered are worth three College credits and students are funded through \$1,500 scholarships paid from the Coal excise tax. The course is limited to 15 students – five from each of Sheridan, Campbell and Johnson Counties. Spear-O-Wigwam operates from June to September.

Sheridan Community College – Spear-O-Wigwam

Spear-O-Wigwam is the Northwest Community College mountain campus. It is located at 8,300 feet in the Bighorn Mountains, not far from the summit of the Bighorn range at 13,176 feet above sea level. The vision for Spear-O-Wigwam is creating student success and making a difference in the community through educational leadership. As the Dean of Outdoor Education explained “the Mountain Campus provides unique and diverse learning opportunities, enriched by outdoor experiences.”

The property consists of 17 acres. It was previously a “Dude Ranch.” This means it was not a working ranch, but rather a place for people to visit and see ranch activities in action. It was purchased by the Northern Wyoming Community College District five years ago and has been extensively renovated since that time. During its operational season (1 June – 1 October) it is staffed with a chef, two cooks, three general staff (general maintenance and other duties), a Manager, an Assistant Manager and a Wrangler. As well as the main camp area, there is a secondary camp (Field Station) at Beaver Lakes, a 7-hour horse-ride or hike from the main camp. The field station sleeps 14 people. The cabins are wooden floored, but under canvas, wigwam style.



The Bighorn Mountains represent an exceptional system for study, largely because the mountains offer protected, pristine wilderness and geographically-isolated populations, in much the same way as Fiordland National Park does. The Bighorn Mountains are an isolated range of the Southern Rocky Mountains and are situated between the arid Bighorn Basin to the west and the Great Plains to the east. Spear-O-wigwam advertising explains that the Bighorns have diverse and unique ecological systems including fens, kettle ponds, wet meadows and alpine lakes. Lodge pole pine and fir dominate the forest, with opportunities to study fire ecology and the dynamics of old growth stands. The concern expressed is that, even with these attributes, the Bighorns remain understudied. Researchers from around the nation are invited to establish research activities at the field station, whether it be in climate studies, natural history, ecological diversity, or other areas of interest that fit the permit area. The Sheridan Community College has an education permit with the Forestry Department for over 60,000 acres. The College is in the process of establishing links with the University of Wyoming, the University of Wisconsin and with Yale University for graduate and post-graduate research. The facility presently caters predominantly for students from Years 8 – graduate.

The biggest concern expressed to me is that many of the Sheridan Community College faculty have still to ‘buy-in’ to the value of the facility. This has been a slow process. The

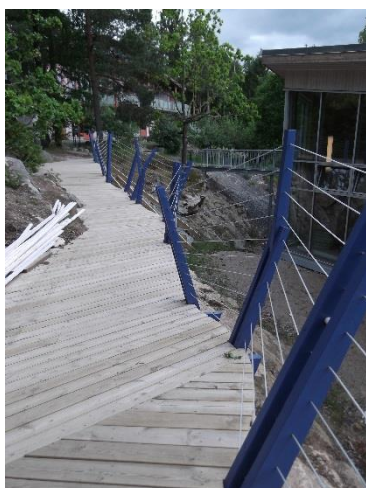
future running of the complex and programme is presently under discussion, and may well end up being “contracted out”, rather than being managed by an internal employee of the College. This matter was to be discussed at a meeting scheduled for the end of April.

Research Findings - Norwegian Examples

Moss Steiner School

This is a school with a capacity for 300 pupils, but with a falling roll. There are currently 180 students from Year 1 to 12 with 30 students in the final two years. The school is situated on the outskirts of Moss, a coastal town in Ostfold County, which has a population of around 30,000 inhabitants.

This Steiner School has definitely nailed the look. You walk onto the property and you know you are in an environmental school. It is impressive. The look includes: School gardens (lots of them), environment they replicate the rocky within which they timbers painted environmentally-hotels, and an outdoor forest. There are gutterings to see composting, and classroom. There (only 7 years old) with a presentation area on the second floor. The laboratories have no seating. The windows open and close automatically when CO2 emissions are too great or when room temperatures need adjusting. The lights turn on and off on entry into, or exit from, the room. There is covered shelter in the forest area, student-built and with no nails. There is an outdoor amphitheatre. The gymnasium is separate from the rest of school. There are no covered walkways, but there are two three-storey buildings for classes. All this is set in the forest, along with a wetlands area, outdoor kitchen and pizza oven. It is easy to see why these buildings won an environmental award in 2013. The physical setting of this school is visually very impressive.



The teachers I spoke to told me that the bulk of the environmental work is done in the Middle School (Years 7-10). At Year 7, the focus is Life in the Woods Garden and work is done around careful planting, the hotel for insects and knowledge of seeds. The school has links with an ecological farm in Vestfold where students spend a week at some point



during their year learning about sustainable farming. It also has a relationship with Tanzania. The Year 10 students had recently returned from Tanzania where they had been working on a water project with a local tribe. The timetable has been specifically managed to allow for extended time in the environment without interference with other classes. There is a double period at the beginning of each day (8.45-10.15). Other periods were 45 minute single periods.

There is a big parent input into the upkeep and development of the school and a stated expectation that all parents donate two full days of their time per year to the school. At the time of my visit wooden pathways were being constructed by the parents. These looked like art works rather than the practical structures that they also were. This parental commitment is what has allowed a lot of the landscaping/structures evident on the school property to be developed.

While their environmental bias was not linked to their senior National Curriculum, you could see on entering the School community was example, the art block brought in from their obvious and had been



school that the Moss Steiner practising their creed. For was a recycled building previous site. This was not very tastefully done.

Teachers stated that the student capability in a develop the habits that the future – being at one nature any further damage and being able to see that the land provides real food for sustainable living.

aim of the school is to build practical arena and to parents want developed for with nature, not doing

Voyenenga School, Oslo

Voyenenga School is a Private Middle School (Years 8-10) of 350 pupils. It is in Baerum County, Akershus State and situated close to Oslo City. Voyenenga Skole is an environmental flagship school in Norway. Appropriate ecological behaviour is the umbrella under which they operate. Environmental thinking is a continuous and systematic process integrated into all that they do.

This school was only seven years old when I visited in 2014, so many of the environmentally sustainable inclusions in the building had been planned for before it was built. However, the school leaders were already facing challenges around sustainability. They had needed to change the lighting system in many classrooms. Waste policies posed some challenges. Maintenance has been a challenge. Many of the original staff members have left and so to ensure the environmental profile does not get changed, new staff have had to be inducted carefully. With this in mind, teachers are sent to As University for professional development refresher courses.

Voyenenga School has been certified for three years as an Eco Lighthouse School and has just re-won this certification for a further three years. Eco Lighthouse is Norway's most widely used certification scheme for enterprises seeking to document their environmental efforts and demonstrate social responsibility. It was founded by central organisations in the Norwegian Government and business community (eco-lighthouse.org/artikler/). The

certification process takes 3-6 months. The school worked with a consultant to do a full environmental audit – energy, waste, transport, procurement work, all things environmental. The certification is valid for three years, at which point a re-certification process must be undertaken. Staff were adamant that becoming an Eco lighthouse is only the start of the process. Being an eco-lighthouse means taking environmental responsibility for all you do on a daily basis and is much more of a challenge.

The school has won the national climate prize twice. The three goals of the climate prize are 1. To motivate environmental work. 2. To contribute to a sustainable development and 3. To create awareness around climate change. The environmental team say that the prize (\$150K between ECE/Primary/Secondary) is only a drop in the ocean, but that what they are looking for is the ripple effect that comes from winning an award of this nature.



They articulated that part of the problem for many schools in Norway is that it can be challenging to facilitate engagement with and participation in environmental issues through academic teaching. Vøyenenga has integrated environmental practices into their Science, Social Sciences, Music and Food and Health curriculums. The aim

of the school is to teach pupils how to act ecologically and how to be eco-friendly. Competitions, projects and events that keep pressure on environmental topics are promoted. The school's commitment to being an Eco-lighthouse can be seen in the little things done every day. Many students no longer 'think' about behaving in environmentally friendly ways, they just do it. They say that many schools in Norway are running small environmental projects, but that there is nothing else in the country that includes the whole management of the school, as is the case at Vøyenenga. This is their point of difference.

The environmental initiatives in the school are student-owned – in that students were consulted in the planning stages and decided they wanted to do it. As a way to reduce the need for cleaners in the school there is a policy of no outdoor shoes being worn indoors. All students and staff change their shoes when they enter the school buildings. All students have lockers.

The school has gone digital. Year 10 students have been issued with school-owned i-Pads which are returned to the school at the end of the school year. The school has actively worked to reduce the use of paper, raising the bar in terms of difficulty of access to copiers. In one year, they have reduced the use of paper by 400kg (93 Year 10 students). They are

committed to not replacing printers and where possible to not printing at all. Their aim for the 2015 school year is to have i-Pads for all students at Year 9 and Year 10 and ultimately at Year 8 as well. However, they did comment that there was a wide variety in the way i-Pads were being used in the classroom, so consideration had to be given to how to engender better/deeper learning. They want to see i-Pads being used as a learning device and had facilitated initial student/staff play to learn about the i-Pad capacity as a learning tool. Now the ‘toy’ needed to become the ‘tool’ and the school community needed to make that transition, within the parameters of the national curriculum and exam.

School leaders had identified the ultimate challenge with going digital as a move from hard-copy text books to text e-books and the current pricing of text e-books. Their hope is to replace hardcopy text books with e-text books in the future. Their belief was that text books need to be digital. Presently students are taking photos of pages they have to read at home. This is definitely less than ideal, but is seen as a transition solution only.

In terms of the curriculum Voyerenga had some good cross-curricular collaboration happening in Science, Social Sciences, Food and Music. There was a week-long environmental project for every student. This had to centre on sustainable development and was a ‘different’ kind of experience than would normally be followed, for that week. For example: outdoors – preservation of nature, science, development, river study, local authorities, how to preserve the fish population, sewerage company, making food with eco products. There was good enthusiasm amongst the staff, because teachers were able to choose what they did, including having visiting speakers. Further to this Voyerenga has developed what they refer to as the Year 9 recycle project, and are entering competitions that look for new inventions or models to save energy. They have recognised that many businesses are eager to co-operate with schools on sustainable development pathways and are looking at ways to capitalise on this.

The Voyerenga leadership team is very aware that from 2015 all senior students (Year 10) will have been born in the 21st century and all teachers will have been born in 20th century. They anticipate that their graduates will have to buy hybrid cars and will be CEOs of companies which will need to make significant environmental decisions. Therefore, their graduates must be prepared now for what they are likely to face in the future. The leadership team acknowledged that it is hard to get kids engaged in next week, let alone in the next ten years and they admit that they “don’t catch all of them,” but they are certain that they “do catch enough of them to make a difference”.

Research Findings – New Zealand

Head Student Fiordland College

Nicholas Humphries (Head Boy 2014) has very strong opinions about what kinds of innovation we could be practising at Fiordland College. In his interview with me Nick spoke of installing wind turbines, solar panels, setting up water collection and having student projects visible around the school (windmills out of old bicycles/lawn mowers), that demonstrate how being environmentally focussed can actually work. He talked of zero waste being practised in other schools in New Zealand, for example Ormiston or Western Heights and challenged “if they have done it why not us?” He talked of being coal free, investigating a whole new heating system for the school and of having in-classroom green areas. He advocated technology use, the reduction of paper and the need to change a whole mind-set.

As he said, he thought “we were supposed to be an environmental school. How come we are doing certain things still that are environmentally unsound?” Nick talked about the classroom that was self-sufficient, where everything was renewable and sustainably timbered and insulated. He suggested looking at other companies/universities that have already set an environmental standard and modelling some of our developments on what they had achieved, rather than re-inventing the wheel.

Nick discussed how being environmentally focussed has been out of the norm in the past, but suggested that things are changing. He did not want to be seen as a tree hugger, suggesting that the feeling amongst students was that being a “tree hugger” was worse than being a “nerd”. He felt that there were other similar stereotypes, which could get in the way of student buy-in into environmental programmes. However, he felt that KRTK had been in place at Fiordland College long enough now that it is accepted by students. He was certain that there has been a huge impact across the Te Anau schools from this project and believes that the influence of the programmes running in ECE and Te Anau Primary are making a significant difference for students coming into Fiordland College. His observation is that this has meant that new Year 7/8 students are much more interested in environmental issues than previous cohorts have been.

In terms of the actual school buildings, Nick talked of a centre that should “feel like you are outside when you are inside”. He talked of more people walking through this area on their way to classes and of morphing into a google work place. He envisaged a 2-storey structure, glass fronted, a technology centre, built on the green space donated to the school. He spoke of having a research focus, a bit like Science Alive Centres in modern museums and he wanted to see, not just conservation, but also agriculture, renewable energies, cultural understandings of the environment and other occupations where environmental considerations are paramount, being considered by students in the school. He imagined a place that other schools also want to utilise for their own programmes.

Nick was advocating a school where learning by osmosis was automatic. Because students could see the example in their daily involvement in school, they would learn to live in an environmentally sustainable way.

Board/Community Workshop

In 2007/2008 the Fiordland College Board of Trustees, commissioned Topajka Shaw Consulting to research the opportunities for the introduction of an environmental education programme at the College.

By 2014 many of the recommendations made in that first report had been acted upon. However, there were clearly areas where there had been little or no progress and it was time to reassess the vision and to take the Board commitment to the next level. The Board has invested a lot of time and resource over the past eight years into trying to establish a way forward in terms of their environmental excellence vision. It recognises that there is a need to be ready to respond to opportunities that might come its way. For example, the Ministry’s Investing in Educational Success Innovation Fund or some other philanthropic opportunity that they are not yet cognisant of. They recognised that in 2014 they were not as ready as they needed to be, because they hadn’t yet fully understood what it was that they were actually aiming for. They had not yet determined what a centre of environmental excellence would actually look like. Over the 7-8 years since that first report, the College has always had a strategic goal around environmental excellence and the Board has been chipping away

at annual targets developed around that goal (see Appendix 1). They have achieved a lot already. Fiordland College is an Environmental school with a Bronze status, working steadily towards silver. It is heavily involved in the Air New Zealand Kids Restore programme with a particular focus on the Kepler – Kids Restore the Kepler. This, along with summer and winter camp programmes, which have an enviro focus, and a wide range of opportunities that have been taken up in the curriculum are all part of what give Fiordland College its ‘special character.’ So we have education in, of/about and for the environment happening to some degree already. Kids Restore has created a bit of a wave for Fiordland College to ride. The Board understands that they need to be thinking forward.

However, while much thought has been given to things environmental by way of conservation projects, and in terms of programmes of work offered within the Fiordland College curriculum, there has been little real thought given to what a centre of environmental excellence actually looks like, sounds like, feels like. The question they have asked themselves is “What would it take for Fiordland College to be recognised nationally and internationally as a centre of environmental excellence.” So, in October 2014 they invited the public to a workshop to help them to begin to articulate the dream and they once again commissioned Topajka Shaw Consulting to analyse the data collected at that workshop.

Following the completion of the analysis of the consultation data, the Senior Leadership Team and the Board, in two separate meetings, categorised the recommendations into short, medium and long-term goals. The Board defines short as being during 2015, medium as happening in 2016 – 2017 and long as 2018+. Those lists now form the basis of the Board’s continuing efforts to become a centre of environmental excellence.

Conclusion

There is nothing that I have seen that beats what we are doing with Kids Restore the Kepler in terms of conservation. The level of collaboration between our teachers in terms of delivering programmes of work that consider environmental practice is impressive, and moving in the right direction. However, there are clearly other areas where we have a lot to learn. A dedicated course on environmental issues is lacking and our buildings and daily practice need serious attention. The important thing now is that we act upon what we have learned over the last two years and work towards becoming the centre of environmental excellence that we have a vision to be. The trick is going to be to stop thinking little and to start thinking big. In the next 10 years, there are going to be some big changes in environmental understandings and we need to be ready to embrace them. In terms of Fiordland College we need to ensure that the grand total of the student experience is an accumulation of many overt and subtle environmental messages.



Appendix 1

Fiordland College Environmental Goals 2008 – 2015

Strategic Aims:

2008 -2011

To use the resources of our local area and community in such a way as to enhance the education of our students

2011 – 2016

Sustainable practices are fostered within the school

The natural environment is used as a key context for delivery of curriculum and for development of the school

Annual Targets

2008

To successfully implement a range of sustainable practices.

To begin the process of the Enviro School accreditation

To appoint an environmental manager for Fiordland College

To have in place a draft cross curriculum programme with full uptake by three curriculum areas.

2009

To develop a senior environmental course ready for implementation in 2010.

2010

To use the resources of our community and our natural environment to the best advantage.

To advance the Environmental Programme in the College.

2011 – 2012

The principal and staff, in collaboration with students and the Board, will prepare a plan for the review, introduction and maintenance of sustainable practices.

The principal and staff will incorporate EOTC experiences into the curriculum Plan.

2013

To further develop links with our local environment (Fiordland/Southland/Murihiku) as contexts for our Fiordland College Curriculum.

2014

To attain Silver Environmental status in 2014

2015

To articulate what being a “centre of environmental excellence” means at the College for the whole school community.



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