**Waimea College**

# Principals Sabbatical Report

## Term 2, 2012

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## Purpose of the Sabbatical:

*"In what ways are some selected schools in other parts of the world addressing the following issues directly related to the implementation of the curriculum through:*

*i) Authentic ("real life") learning opportunities?*
*ii) Information and Communication Technologies for teaching and learning and how these are used in relation to (i) above?"*

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- The Education Review Office.

## Executive Summary

### *1. Enterprise in the delivery of the curriculum*

- In the selection of secondary schools visited on Vancouver Island, British Columbia, Canada and in the Monterey Peninsula area of California, "real life" (authentic) learning strategies are not often used.

- There is a much stronger focus in these schools on teacher-directed approaches to learning than there is on student-centered or student-directed approaches.

- This stronger focus on more traditional teacher-directed approaches to learning was attributed by those I interviewed to three things:

  - The need to teach to a very tightly prescribed curriculum in each subject area.
  - The lack of close connections with community groups and businesses.
  - The demanding health and safety compliance required for students and staff to participate in activities off the school campus.

- I observed pockets of innovation with regards to "real life" (authentic) learning in some of the schools I visited. Examples of this were in the subject areas; Autoshop, Woodshop, Robotics and Photography. Teachers in these subjects seemed to be (i) more easily able to adapt their course requirements to include authentic learning approaches and (ii) more willing to try this approach than teachers in other subject areas.

- The teachers I discussed the concept of "real life" (authentic) learning with were impressed by the type and range of enterprising projects undertaken at our schools in New Zealand. They were very interested in how our curriculum is based around five Key Competencies and the connection of these to the Enterprising Attributes (Refer: Appendix 1).

- The students I discussed these projects with were very keen to have these types of teaching/learning strategies include in their subject areas. They frequently referred to how it would make the learning relevant to them.

- Many New Zealand secondary schools are providing excellent opportunities for their students to experience "real life" (authentic) learning strategies. Many are innovative and very effectively engage students some who would otherwise be at risk of performing below their potential, developing behavior issues and leaving school early. These strategies have also assisted schools to develop positive and effective connections with the wider school community. (Refer: Appendix 2).

### *2. ICT use in teaching and learning*

- As expected, there is a very big variation in ICT facilities and the use of digital devices in the selection of schools visited.

- All schools had both cabled and wireless networks. In the case of the wireless networks, ease of access and reliability were issues for both staff and students.

- Most schools permitted students to bring their own devices and (with some restrictions) to access the wireless network. However, with the exception of one school, I did not observe a lot of use of these devices in innovative ways.

- In one school I observed many examples of how BYOD's can be used effectively by students and staff. For example students multi-tasking with a range of devices in Art:
  - digital camera for photography.
  - use of graphics and design programmes on their laptop to draft ideas for painting, murals, sculpture, ceramics.
  - communication by text messaging or phone conversation to discuss their work with classmates working in other areas of the school.
  - internet searching, emailing to access people outside the school as resources.
  - iPods for photography, sound recordings.

- The majority of schools I have visited in New Zealand of similar type and socio-economic background have better ICT facilities and access for students and staff than most schools I visited.

- Many schools in New Zealand are recognizing the advantages in allowing BYOD's and students and teachers are responding well to the challenge of using digital devices inside and outside the classroom to engage students in their learning.

## Introduction

Enterprise in the delivery of the New Zealand Curriculum takes many different forms. At Waimea College we have for some years now, focused on what we call Education for Enterprise (E4E). E4E is "real life" (authentic) learning.

*An E4E activity includes three things:*

- *a relevant and authentic learning environment.*
- *a learning focus that develops enterprising attributes in students.*
- *it involves a partnership with a community or business client.*

Education for Enterprise approach is a strategy that meets the intent of the New Zealand Curriculum to deliver the Key Competencies:

- Relating to others.
- Using language symbols and text.
- Managing self.
- Participating and contributing.
- Thinking.

There is a very close match between these *Key Competencies* and the *Enterprising Attributes* (see Appendix 1) defined by the E4E approach to teaching and learning. I consider they are inextricably linked.

**Purpose of the Sabbatical:**

*"In what ways are some selected schools in other parts of the world addressing the following issues directly related to the implementation of the curriculum through:"*

i) *Authentic ("real life") learning opportunities?*
ii) *Information and Communication Technologies for teaching and learning and how these are used in relation to (i) above?"*

*Specifically:*

*For i) above:  What programmes do schools have in place that address the delivery of the Key Competencies though authentic learning opportunities for their students?*

*For ii) above:  What Information and Communication Technologies (ICT) and facilities do schools have and how are these being used to assist development of the Key Competencies through authentic learning opportunities?*

## Programme

I visited a selection of six secondary schools (high schools) in North America. Two on Vancouver Island, British Columbia, Canada and four in Monterey County, California, United States of America.

These visits were based around where I had professional contacts, colleagues or students past or present from my college.

I initially contacted the schools via email and then with a follow up phone call to the Principal to arrange the visits. A month prior to the visit I sent a short email to the Principal outlining the current authentic learning programmes and use of ICT at my school, so they had background information about what I would like to observe and discuss.

I spent 1-2 days in advance of each visit researching background information about the school, its culture and community. This information was gathered from the schools website and conversations with people who knew the school as well as from the school district office.

I spent 1 day in each of the schools and during this time met with the Principal (or their delegate), other staff members and students. I toured the facilities at each school and spent time observing and discussing any authentic learning examples and on how Information and Communication Technology (ICT) was being used in teaching and learning. Where possible I took photographs. These were largely restricted to photographs of the facilities, as all schools I visited had strict protocols around photographing students and/or staff.

After each school visit, I spent 1-2 days evaluating and writing notes about my observations and discussions.

I also used the time away from my school to read articles on authentic learning and ICT and to discuss these as effective teaching and learning strategies with professional colleagues and students.

In addition, I was able to enjoy the opportunity to think reflectively about the current practices around authentic learning and ICT in my own school and what can be done to enhance these opportunities.

### 1. Background

*For i) above*

Waimea College has for over 6 years had a focus on providing authentic learning opportunities for students through its Education for Enterprise (E4E) "making it real" programme.

This work aligns directly with the vision, intent and implementation of the New Zealand Curriculum.

The college has developed a large number of special programmes and activities to support this authentic learning focus at both junior and senior curriculum levels.

Waimea College has been the Lead School for this programme in the Nelson/Marlborough region and has also worked collaboratively with other schools in New Zealand (predominantly in the Northland region), New Zealand Trade and Enterprise, The Nelson Regional Economic Development Agency, The New Zealand Council for Educational Research and the Education Review Office.

*For ii) above*

Waimea College has very good ICT facilities and many staff and students are competent and frequent users of these facilities for teaching and learning. Many activities in our authentic learning (E4E) project have made good use of our ICT facilities and digitally based teaching and learning strategies.

Recently the school has been involved in a project that has identified some of the imminent changes and challenges associated with ICT in schools. We also recently installed a wireless network access across the whole campus. We anticipate a marked increase in BYOD (Bring Your Own Device) use by both students and staff. I was keen to see what other schools are doing to identify likely future directions in ICT to help prepare for these changes.

## 2. The School Visits:

*NOTE: To retain anonymity, the schools have been identified in this report by type, location, and profile rather than by name*

## School A

*(Hosted by a past student from our school)*

### *1. Background information*

- The Faculty has 21 teachers. Most teach in one subject area and have an additional interest or specialist teaching area (horticulture, kayaking, sailing, etc).

- Private, international school, one of 13 United World Colleges across the world. Co-ed, boarding, all students here are on full scholarship (everything paid).

- Currently 160 students (caters for up to 200).

- Wide range of socio-economic backgrounds. Students come from a range of different countries across the world; all have gained a place based on high level academic ability and performance. The application process is rigorous.

### *School goals and vision*

United World Colleges make education a force to unite people, nations and cultures for peace and a sustainable future.

This is based on the following basic principles:

- Education should take place in a diverse school or college community.

- The selection of students should ensure representation from regions and social groups that reflect the wide range of tensions among and between people.

- This education requires the active promotion of intercultural understanding and the development of genuine concerns for others founded on shared life experiences and cooperative and collaborative living. This includes reflective dialogue on global issues and critical and courageous engagement in the pursuit of peace.

- That physical fitness and a healthy lifestyle are integral to the balanced development of the whole person.

- That community action is placed at the heart of college life. This requires the full and active participation of all members of the community.

- That students are able to engage in continuing positive action towards issues of sustainability on both an institutional and individual level.

- That opportunities must be provided for students to practice personal initiative, self-discipline and responsibility, to manage risk and embrace challenge.

- That recognition must be given to the unique talents and abilities of each individual.

- Programmes should exist to enable all students to fulfill their potential.

*2. Authentic Learning examples (application of classroom learning to "real life" situations).*

There are many examples of this (too many for me to cover all):

- Every day after academic lessons, (all school subjects are delivered under the International Baccalaureate system) students are involved in activities that include things like, kayaking, sailing, mountain biking, horticulture (the college has its own tunnel house and grows a lot of vegetables used in the dining hall catering), recycling (paper, composting, plastics, glass, metals), planning and participating in expeditions, drama and music productions, art exhibitions, global challenge discussions and debates, guest presentations, etc.

- Students are required over the two years they are at the college to participate in four projects. These are determined by the students themselves and must involve participation by others e.g. plan and lead an expedition. Some I learned about were: white water rafting, kayaking around islands, 24-48 hour survival trips like Outward Bound. In addition the students are required to participate in community action programmes during their holiday breaks. I understand that they must participate in at least two, one for each year they attend the UWC. Examples I learned about included: working in a wild life sanctuary, working in a community support programme for homeless people, running leadership camps for young people.

- The range of clients these students work with is extensive and includes: the school itself, students from within the school, community groups, individuals, businesses. It really depends on what projects the individual students design.

- The sequence in developing "real life learning" opportunities for students is centered almost entirely on the students themselves. They must develop their project. They only go to a staff mentor for guidance and final approval.

- Many of these are "innovative" and encourage the students to push their personal boundaries, challenge themselves and other students.

*3. The use of ICT in classroom teaching*

- The school is cabled and also has a wireless network. The wireless network is set up in a rather strange way in that students can only access it in certain spots around the school and have to log in with a new code at each different facility (e.g: a different one at the library, to the Arts and Music centre, to the Science rooms, etc).

- The college has no desktop computers for students. All students have their own laptops as do teachers. There are data projectors and/or interactive whiteboards in all classrooms.

- There is no cell phone coverage in the area and so the issue of students having and using smart phone type devices in class is not really an issue as they only require devices that can access the internet via the wireless or cabled facilities. A few had iPods in addition to their laptops which they used as diaries, music and occasionally photography.

## School B
*(Hosted by the Deputy Principal)*

### 1. Background information

- Private school, co-ed, boarding.

- 430 students, 60 day students the rest board on site.

- High level socio-economic background. All students who are enrolled must score in the top quartile of standardised school testing and then are interviewed and assessed against other criteria.

- School goals include the highest level of academic achievement. All students are educated on the basis that they will go on to university. The goals also include a belief that all students should excel in the Arts and Athletics.

- The school charges NZ$25,000 per year fees for tuition and boarding.

- The parents have high expectations that the school will deliver to a high level in the three A's i.e.: - Academics, Arts, Athletics.

### 2. Authentic Learning examples (application of classroom learning to "real life "situations).

There are very few examples of authentic learning in the context that we view it

- The school itself serves as a client for some authentic learning activities such as the regular preparation and presentation of Dance shows, Drama productions and Visual Arts exhibitions. While these are also open to the parents and community groups they are not clients as we would view them in a true authentic learning environment.

- Every activity that I observed or had described to me as an example of authentic learning was very teacher-centered and driven. Typically the teacher would describe a situation, outline the problem or challenge for the students and even then assist them with the planning of the projects.

- I did not observe or have outlined to me any activity that I would describe as innovative.

- The college has a very strong and traditional approach to and emphasis on academic learning that is very teacher-centered

- The staff and students I spoke to showed considerable interest in the authentic learning projects that have been undertaken at our school and other schools in NZ. Some teachers were very keen to try some similar type of activities. (The challenge will be to work with this approach in a school culture that centers on academic performance, a teacher-centered delivery and does not encourage experimentation).

### *3. The use of ICT in classroom teaching*

- The college is cabled and also has a wireless network across the entire campus. (That's 25 acres or about 10 Hectares!). It has high level security controls and any student found to be breaking rules around passwords, etc is treated quite severely. It seldom happens however as the students are all fee-paying and there is a strict requirement at enrolment for them to comply with all rules and regulations or they can be removed from the school.

- The college has exceptional ICT facilities. However, it is worth noting that their four desktop ICT rooms are used less that half time now as in the last two years students have been required to have their own laptops (or touch pads) and take them to all classes. In many classes I saw students using their laptops as if they were exercise books. Notes were taken directly using a word processing programme on their laptop. Many accessed website information while the teacher was delivering a topic. (Sometimes to the annoyance of the teacher when the student queried the accuracy of the information versus what a website might say). Mobile phones/smart phones were common. I saw no evidence they were being used in an inappropriate way.

- Students are allowed to bring their own devices to school and provided they are used appropriately there are no restrictions. I saw some students using both laptops and smart phones at the same time, the laptop for note taking, diagrams, etc and the smart phone for communicating with others from the class who were working in another part of the school. In some cases they took multi-tasking to a new level. Using a laptop, iPod, Smartphone and digital camera all within a short space of time in a lesson!

- Some examples of how BYOD's are used for learning. Note-taking, graphics, music recording and creation, photography, design in art and textiles, internet searches, emailing, texting.

- The school has not encountered many issues with students using their own devices. The use of ICT network facilities is extensive and there are rigid protocols around how these can be used.

- There are obvious advantages in BYOD use at the school. Students and staff have embraced the constructive use of digital devices for teaching and learning and significant expenditure has occurred to support this. All rooms have data projectors (many of which are short throw projectors that eliminate the problem of students and staff moving in front of the projector). They are looking to place in all new rooms, projectors that do not need smart tools and instead having teacher tablets that are light and can be easily carried to any part of the classroom.

## School C
*(Hosted by the Deputy Principal)*

### 1. Background information

- State school, co-ed, day school.
- Student roll 800.
- Students come from high socio-economic backgrounds (I estimate it as decile 10).
- School goals include a focus on high academic achievement. (It is expected that students will go on to the top universities). They also have a wide range of sports and arts activities available.

### 2. Authentic Learning examples (application of classroom learning to "real life "situations)

- I observed very little authentic learning. It appeared to me as in all US Californian schools there is a rigid adherence to the curriculum and the ways in which it is taught. At this school there were a few examples of community service type activities such as: assisting to raise funds for child cancer support groups, projects to clean up sections of the local environment, assistance at a retirement village. These were not student driven, were voluntary and participation levels were not high.

- The clients for these activities were the school itself and community groups

- The sequence in developing any "real life learning" opportunities for students was very teacher driven. Consequently the few activities that were successful in terms of the numbers of students participating and outcomes depended on the drive and enthusiasm of the teacher leading them.

- I did not observe or hear about any projects that I would describe as innovative, allowed students to push boundaries of learning or challenge the students and teachers to look at teaching and learning in a different way.

- At their invitation I presented and discussed some of the authentic learning (E4E) projects students and staff at our school have undertaken. They were very interested and I received a lot of questions about how these projects were run and their outcomes. Many students expressed an interest in learning in this way and some staff were keen to try this approach. Again, the stumbling block appears to be the necessity to follow a rigidly defined curriculum.

### 3. The use of ICT in classroom teaching

- The school is cabled and also has a wireless network. The wireless is patchy across the campus and so has limited use. It's an issue they hope to address in the near future as the expectation of easy access to the internet, email, etc from staff and students increases.

- There are 3 desktop computer suites. They are used frequently and access is an issue. Many students have laptops but because the wireless network is patchy and unreliable they are not being used as well as they could be.

- The students are allowed to bring to school cell phones, laptops, smart phones, etc.

- Students are allowed to use laptops or tablets in the classroom.

- Cellphone/Smartphone use is not permitted inside classrooms (but as we have grown to expect, I saw plenty of examples where this was happening without the teacher knowing or objecting).

- Those who had laptops were using them for note-taking, word processing, (searching the internet, emailing when the wireless system worked)

- Most classrooms had data projectors and interactive white boards and teachers used them frequently.

- Apart from the use of laptops as noted above, I saw no other examples of BYOD's being used for teaching or learning.

- The school claims to have encountered very few problems with student use of BYOD's. The biggest issue has been cyber bullying via cellphones/smartphones outside school time (and then of course the school trying to deal with the after effects that roll over into school time).

- Staff I spoke to were concerned about the poor wirelesses access and aware that students could use BYOD's for learning but had done little research into the use of these devices for teaching and learning.

## School D

*(Hosted by the school's campus supervisor)*

### 1. Background information

- State, co-ed, day school.
- Student roll 1000.
- Many students from lower socio- economic backgrounds and a wide range of ethnic groups the largest of which is Hispanic. (I estimate it as decile 4-5).
- School goals.  The school has been through a difficult period with student attendance, behaviour and achievement all being poor. The current principal has been making strong efforts to change the school culture and raise achievement with some success to date.

### 2. Authentic Learning examples (application of classroom learning to "real life" situations).

There are few examples of this. Like all state schools in California the curriculum is very prescribed and the teaching programmes and strategies are quite traditional and teacher-centred in their approach.

The school has naval cadet unit on site and there are some elements of authentic learning in the course.

The Robotics, Autoshop and Woodshop programmes have elements of authentic learning approaches in them and are very well delivered by the staff and highly regarded by the students and the clients.

- The clients include the school itself, staff members (vehicle restoration, furniture construction), community groups, businesses.

- There is very little opportunity for teachers to trial the authentic learning approach. Many that I spoke to have a keen interest in doing so and see this approach as highly relevant to their students. However, they cite the constraints of time and a very prescribed curriculum as barriers. Students and staff that I spoke to about our E4E programmes were impressed and very interested.

- The sequence in developing any "real life learning" opportunities for students is teacher driven. Teachers in the Robotics, Autoshop and Woodshop departments were very keen on this approach and seemed to have the ability and the desire to adapt the curriculum. The results were very effective authentic learning programmes and that was reflected in the very positive feedback from students and staff and the clients I was able to talk to.

- Which programmes could I describe as "innovative, push boundaries, challenge the students and teachers"? The Robotics project would fit this description. Students are given a challenge and then they must design and build their solution. These final products are quite sophisticated in both construction and operation.

- The two projects that I observed were:

i) Design and construct a robot to be used for Volleyball team practice that can gather and store 5 volleyballs and then pass them at different angles and speeds and retrieve them.

ii) Design and construct a robot as above but for 5 basketballs.

- What is planned for the future? They were very interested in what we have done at our school and other schools in NZ. They were also interested in our curriculum and the Key Competencies around which it is based. There was an expression by quite a number of staff that I met that there will be significant reforms in education in the State of California in the next 5 years and authentic learning opportunities will be part of these reforms.

## 3. *The use of ICT in classroom teaching*

- The school is cabled and also has a wireless network. The wireless network is very patchy in areas of the school and unreliable. The area with best and most reliable coverage was the administration area. (This struck me as strange as the people who work in this area all have desktop computers operating though network cabling!) The area of next best coverage was the Library and as a result many students with BYOD's congregated in or around the Library at breaks.

- The school has 3 computer rooms. Some specialist rooms such as Music, Autoshop, Woodshop, Robotics, Art and Photography have small pods (2-4) of desktop computers.

- Students are allowed to bring cellphones/smartphones, laptops, touch pads to school. Cellphones/Smartphones are restricted to use outside of class time unless the teacher has been given permission by the Principal for students to use them as part of their lesson.

- There were very few examples of how BYOD's can be used for learning A very small number of students have their own laptops and use them for note taking in class, they also use them for web searches (if they can get on the wireless network!). A small number of students use their smartphones for similar tasks.

- The school has not encountered any significant problems with ICT (in particular with BYOD) use. A few problems have been encountered with inappropriate use by students but the school considers they have been minor issues and relatively easy to deal with.

- The wireless network has proven to be limited and unreliable and for that reason very frustrating for students and staff.

- Any advantages/opportunities the school has experienced with ICT and in particular with BYOD use is unknown at this stage. The school still considers it is by very much in a trial and learning stage.

## School E
*(Hosted by the Principal)*

### 1. Background information

- State, co-ed, day school.

- Students roll 540.

- A broad range of socio-economic backgrounds, more from the middle and high end.

- (I estimate it as a decile 7-8).

- School goals. The school has gone through a considerable drop in roll (from near 900 to the current 540 over a 10 year period). This is attributed to the migration of families who cannot afford to live in the immediate area as property values have increased considerably in the last 10 years. The Principal has focused on promoting high academic achievements for students, high standards of behavior and the provision of an extensive extra-curricular programme. Indications are (from my conversations in the community and with staff and students) that this is working and a small increase in roll is predicted for next year and each year beyond.

- The school overall has very good facilities and a lot of spare classroom space because of the roll decrease.

### 2. Authentic Learning examples (application of classroom learning to "real life" situations).

Not a lot of this type of programme occurs in the school. I did see examples in Photography where once the students have developed a basic skill set, they are required by their teacher to find a "real life" client and undertake a project with them. In the Autoshop, Woodshop and Robotics programmes there is an element of the E4E approach in that the students as part of their curriculum often do work for clients.

- Clients include the school itself, staff members, community groups, businesses.

- The sequence in developing "real life learning" opportunities for students seems to largely depend on the teacher. Teachers in most subject areas feel they are very restricted by what they must deliver in the curriculum. They seem to be mostly using traditional teaching techniques to do this.

- Which programmes could I describe as "innovative, push boundaries, challenge the students and teachers?" The Robotics project would fit this description. (Refer to the notes for school D above as the projects are the same).

- There were some encouraging signs that in the immediate future more authentic learning opportunities would be initiated. There was a lot of interest in what we have done at our school and other schools in NZ. I was able to refer to copies of DVD's and notes about our E4E projects with the Principal and some staff.

### *3. The use of ICT in classroom teaching*

- The school is cabled and also has wireless network. The campus is well covered by its wireless network and staff and students make frequent use of it.

- There are 3 computer rooms, 3 Computers on Wheels (COWS) stations with 25 laptops. The principal estimated that around 15% of students have their own laptops or touch pads and this number is increasing.

- Students are allowed to bring to school; laptops, touch pads, cell phones/smart phones, iPods, digital cameras. There are few rules around their use other than "appropriate and considerate".

- It is up to individual teachers to determine whether or not they want students to use their own devices in the classroom. There seemed to be little issue around this with the teachers I spoke to. I observed in most classes students who had laptops using them for note taking and to access the internet. In other specialist classes I saw students using lap tops, smart phones, ipods and digital cameras for note taking, web searching, graphics and design work, photography, musical composition, movie work.

- They have taken the "high trust" approach to students using ICT and in particular BYOD's and have very few problems with students inappropriately using the technology. They do as we do in NZ have a few issues with out of school bullying via text messages, Facebook, etc. As in all schools I visited, they have filters restricting access to some sites.

- There are a number of advantages/opportunities the school has experienced with ICT and in particular with BYOD use. Students like using the technology, are good at using it and they can work quickly with it to perform tasks that would take much longer if done in other ways. Staff overall have a positive approach to keeping up to date with the technology and adapting to ways students can use it.

## School F
*(Hosted by the Principal and Deputy Principal)*

### 1. Background information

- State, co-ed day school.

- Student roll 1020.

- Students come mainly from low socio- economic backgrounds. There is a very wide range of ethnic groups, the largest of which is Hispanic. Many parents of these students are the working class or blue collar workers who are employed in the wealthier areas of coastal California. (I estimate it as a decile 2-3).

- School goals. This school was identified three years ago as a "failing" school and the administration team and almost half of the teaching staff was replaced. Financially the school was in strife and the academic achievement of students was according to their standardized testing, very poor. The school has been placed on a 3 year improvement plan and given US $1million to assist. The Principal has set about raising standards of attendance, behaviour and achievement and after two years there has been significant progress. Overall, there is a positive feeling amongst the staff and students and those I spoke to felt pleased with the progress the school had made in the last year.

### 2. Authentic Learning examples (*application of classroom learning to "real life" situations*)

- This type of teaching approach is almost non- existent in this schools programme. Again, this seems to be largely due to the State of California's requirements and expectations that the school will teach according to the prescribed curriculum and in a fairly traditional way.

- I did see a "real life" learning situation with students from a low achieving class clearing the site, building the containers and fencing the area for a small garden. They had also been involved in planting this out.

- The Naval Cadets unit that runs on the campus would also fit into the authentic learning category in that the students do some "real life" learning on the Naval base.

- I talked to the Principal and a Technology teacher about the schools recent involvement in a Robotics programme which definitely has an E4E approach. This school has only participated in the programme for one year. They are expanding it to involve more students. It is part of a local initiative that includes a competition amongst the regions high schools in which they are set a challenge of designing and building a robot to perform a specific task. This year's challenge was for the robot to be able to gather up basketballs, store them and then shoot them back to the player who is practicing.

- There doesn't appear to be any clear sequence in developing "real life learning" opportunities for students. Anything like this is teacher driven and to be fair at present the focus in their recovery programme in the school is on improvement in the three areas or attendance, behaviour and achievement.

- There was great deal of interest in the projects we have undertaken at our school and other schools in NZ. There was also a strong feeling from quite a few teachers that in the future, authentic learning approaches would be of great value to their students, many if not most of whom will graduate but not go on to college.

- While the school has a positive, friendly culture and a pretty challenging clientele, the opportunities for authentic learning projects are few because of the seemingly rigid curriculum requirements and the current school improvement focus.

- The principal was really fascinated by and interested to hear about what we are doing at our school. *In her words "Education in the States is ready for and will probably undergo a significant reform in the next 5 years and I believe we will look more closely at trying the sort of programmes that your school is already doing. There has for too long been a focus on a very narrow curriculum in an attempt to get every student to achieve within very narrow boundaries. For students like those at our school, the opportunity to see in the real world the relevance of what they are learning would make a huge difference".*

### 3. The use of ICT in classroom teaching

- The school is cabled and also has a wireless network but students do not access this network unless they are using the Computers On Wheels (COWS). The school has four of these each of which holds 40 notebook computers. They can be moved to almost any location on the campus.

- The school still has in place a policy that cellphones/smartphones can only be used outside class time. There is no immediate plan to change this as it is part of a package of rules that the principal put in place in the improvement plan.

- The school for its roll size has very limited ICT facilities. There are only two computer suites with 40 desktops. Some specialist rooms have small pods with 3-4 desktops. Eg: Music, Autoshop, Woodshop, Visual Art, and the student assistance room.

- Students are not allowed to use their own devices such as cellphones/smartphones in the classroom unless the teacher has approval from the Principal. At present the senior staff feels that to make progress with the improvement plan they must place some clear boundaries in place and enforce them. From my observations, this seems to be working.

- A few teachers had entered into an arrangement with the Principal that students could use cellphones to text answers to one another and the teacher, as calculators, diaries.

- The only significant problem the school had experienced in the past two years with ICT use was with some students hacking into the wireless network in administration!

- The school has not had enough experience with students bringing their own devices so at this stage was unable to comment on any advantages or disadvantages. The Principal did say that while it would be a financial advantage to the school if students were to bring their own devices, the socio-economic background of the families in the school community was such that many would be unable to afford laptops, touch pads, etc.

## Conclusions:

In the secondary schools visited for this study:

- 'Real life' (authentic) learning strategies are not often used.

- There is a much stronger focus on teacher directed learning than on student centered learning.

- Real life learning strategies were observed in some schools in subject areas such as Autoshop, Woodshop, Robotics and Photography.

- These observed strategies however often lacked one of the three categories that we used to define authentic learning (E4E) i.e.:

    *An E4E activity includes three things:*
    - *a relevant and authentic learning environment.*
    - *a learning focus that develops enterprising attributes in students.*
    - *it involves a partnership with a community or business client.*

- The constraints of a very prescribed curriculum has resulted in a reluctance by teachers to trial very many authentic learning approaches.

- Many teachers and Principals were very interested in (i) The current New Zealand curriculum, (ii) The use of authentic learning approaches to deliver this curriculum.

- Students I discussed authentic learning projects with showed a high level of interest in pursuing this type of learning strategy.

- New Zealand secondary schools using real life (authentic learning strategies) have developed many innovative and engaging projects for students.

- The potential for students to use BYOD's in a way that will enhance the efficiency and effectiveness of classroom learning is significant as exemplified by the following observation. A student was multi-tasking in a Visual Arts class using a laptop, smartphone and digital camera in the design of her painting project and an iPod to critique a music composition from a fellow student.

- There is a wide variation in ICT facilities and the use of digital devices by students and staff.

- There is a large variation in restrictions schools place on student use of BYOD's.

- There is still significant experimentation with student and staff use of BYOD's.

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