

# Sabbatical Report

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Term 1 2010**

## Acknowledgements

Many people have assisted me during this sabbatical – the goals were:

- **“To investigate innovative programmes and practices that support student achievement in schools with particular emphasis on years six to eight students.**
- **To investigate if full primary schools that succeed in retaining the majority of their year 7 & 8 students have any such programmes and practices particularly in the area of Mathematics.”**
- **To establish if there is any common reason why full primary schools succeed in retaining their year 7 & 8 students.**

I would like to acknowledge the Karaka School Board of Trustees for supporting my application for sabbatical leave.

I also acknowledge the management team and staff, of our school who so ably took up new roles during my absence.

I acknowledge the Ministry of Education for making sabbatical leave available to principals.

My last acknowledgement is to the nine schools I visited in the Southland, Nelson and greater Auckland area, and the twelve additional full primary schools who responded to my questionnaire regarding retaining Year 7 & 8 pupils. The principals, or in several instances their DP, AP and senior staff gave me a large amount of their time in a generous and open manner. This is especially appreciated knowing that term one was rather busy with the all schools attempting to come to grips with the National Standards.

## Background to Sabbatical

Over the last seven years at Karaka School (U4) the Board of Trustees and staff have made a conscientious effort to promote the year 7 & 8 area of the senior school. The roll in this area of the school has grown from 3 year 7 & 8 students in 2002 to 40 in 2010. As part of this, very successful programmes have already been promoted where excellence is encouraged (e.g. Over three years winning the New Zealand Jump Jam Year 7 & 8 title); and promoting and participating in combined activities with other full primary schools in the local cluster, such as the New Zealand Authors contest, extension art and dance programmes and written language extension programmes.

The theory was to investigate what programmes other schools provided and consider what else might be developed. Mathematics programmes were of particular interest. Tied in with this was an investigation into the main reasons why families choose to stay in full primary schools and establish why some chose to leave to attend other types of schools (Intermediate, Middle, Area Schools, and Year 7 to 12.)

The visits provided an opportunity to interview teaching staff and senior management as to what they believe was leading edge and meeting school and community needs. Emphasis was on, but not limited to innovation in mathematics with a view also to observe unique programmes offered in science and ICT.

The aim was to look at these programmes, each with their own points of difference, and to provide comparative data. This was to ensure that the BOT, staff and community understood what was happening in a variety of other schools and what might be considered in future development for us. It was also to ensure that what we provided was comparable to programmes offered in other primary, contributing and Intermediate Schools. (Note this is a comparison often made by the local community especially when deciding where their children would attend school at year 7 & 8)

#### **Basic Questions to be asked:**

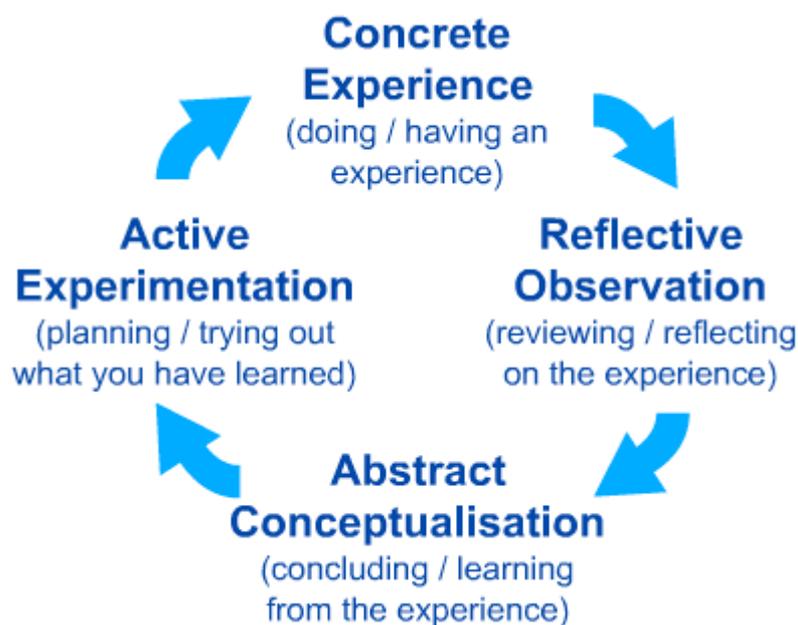
##### **Question 1: What did literature recommend or say?**

##### **Theory behind method of research**

As principal it is understood personally that everything cannot be done in isolation alone and the development of worthwhile programmes in the senior school would allow for stronger ties within the community and it would benefit the children attending Karaka School.

**It is the principal who binds together the various threads of “values, vision and culture”** (Campbell – Evans, 1993:110 cited in Stewart 2006)

Kolb’s cycle of reflection was used to guide personal thinking. Kolb (1984) thought of learning as an ongoing process – a continuous series of cycles.



### *Numeracy Involvement*

In mathematics there was a lot of recent literature related directly to the introduction on the numeracy initiative. In reflecting on these findings, most stated the virtues of this initiative.

Opinion gathered from visits varied a little from this. One school stating, that they deliberately did not get involved with the numeracy initiative as they could not see any benefit for their school as their programmes were already very successful. More than half the schools reported a small drop in PAT stanines results in the year immediately after the first year of the numeracy initiative. All believed this was explained by stating that they felt strands other than numeracy were initially not covered adequately, and this affected results.

On the positive side, all those who had been involved in the numeracy initiative felt that this was useful school professional development but also felt that in the senior area of the school it is very important that the other strands must be equally emphasised.

What was clear from those involved was that the resources and teaching techniques provided through the numeracy initiative were widely used for the lower achievers in mathematics in the year 6 to 8 area. With teacher guidance this was a very good resource when using teacher aides to assist in lower groups.

One response the numeracy programme was,

“A lot of grumbles initially from staff until they could actually see they were making a difference. We had speakers come in to talk on the importance of the other strands. We hold PD regularly/ cross group meetings so as staff are competent at the level they are dealing with. Some staff choose not to take the top group.”

### *Cross Grouping/ Streaming*

A widely used method in schools visited was cross grouping or streaming. There was certainly a lot of research available on the pros and cons of this. This report only touches on some of the literature and findings read.

Some examples of contrasting views were.

- One article on the BBC News webpage dated April 26, 2002 claimed that research by Dr Sue Hatham, London University, Institute of Education suggests through her extensive research that, *“grouping pupils by ability does not automatically raise standards and could just serve to demotivate those in lower sets. .... Where pupils don't feel valued, they will see other ways of maintaining self esteem.”*
- A study commissioned by the National Council for Curriculum and Assessment NCCA in the UK shows, *‘If you take a student out of a mixed –ability education and put them in a “slow” stream they tend to reach the level of underachievement they feel is expected rather than strive to grasp the topic and rejoin the main stream.’ ..... “putting the elite into the fast stream means students might reach the level of achievement expected of them, but it is also possible that they will settle into a sort of comfort zone and fail to challenge themselves by striving to go further.*

- An article by Robyn Zevenbergen, Griffin University , Australia stated “ Streaming, or ability grouping ,is a common practice in many mathematics classrooms. It’s negative effect on students have been documented in research spanning two decades of more, and yet it is still widely – in some countries (such as UK) even mandated.

Streaming/ cross grouping is a controversial topic, and it has many critics. What was found was that in the schools visited, it was a popular and successful method of structuring groups in mathematics.

Students were generally cross grouped according to assessment results at the end of each year for the coming year. Most schools allowed group membership to alter during the year. Staff spoken to felt that by grouping this way, slower groups and extension groups could be smaller in number and get more one on one assistance; resources could be targeted more at the ability of the group and staff could teach at a level they felt comfortable with.

Though no evidence was seen of this first hand, it was interesting to read in research that “concerns had been voiced about teacher allocation at streamed schools. Critics are suspicious that the ‘higher ability classes’, normally referred to 4A or 6A for example, are given the very talented, experienced, or senior teachers. Advocates of streaming and streamed schools argue that there are no better’ teachers at their schools; that all of their ‘teachers are of a high quality.’”

As it turned out in my visits cross grouping was very common practice. From personal experience of over forty years and ten different schools, streaming/cross grouping in mathematics especially, has long been practised in larger schools.

### **Question 2: What was happening in Mathematics in schools?**

- Six of the larger schools cross grouped their children during mathematics to allow for a lower achieving group and extension group.
- All of these six schools cross grouped over at last two class levels.
- One school successfully cross grouped from Year 4 to Year 8.
- All of these schools felt this provided the best way for delivering mathematics for both children and staff.
- Several schools felt that by cross grouping both staff and children benefited in ways (a) lower level classes were often smaller (b) some teachers didn’t feel they had the ability to take higher level classes
- Those that did cross group had school rolls less than 150

### **Summary of lower group programmes**

- Three schools catered for the lower achieving children by grouping within their classrooms.
- The other six schools cross grouped.
- Four of the schools had a teacher aide attached to the lower class to assist the teacher.
- A STEPS programme was running well in one large school. STEPS stands for Strategies to Elevate the Performance of Students. Students who require assistance in both mathematics and reading attend these classes on a daily basis.
- There was a cross section of resources used. These were mainly Numeracy based and linked to numeracy resources. See Appendix A.

### **Extension group activities**

- Eight of the schools allowed their pupils to participate in Otago Problem Solving, ICAS competitions, and Mathex. The schools varied on how children were chosen/picked to participate in their school. Some chose the children on results and some made it a parent/pupil option.
- Use of the many texts available to schools. (see Appendix One)
- Individual problem solving at least three times per week.
- Team problem solving similar to Mathex, (once a week.)
- AMC old Westpac exam.
- A variety of extension classes offered in numeracy, literacy and thinking. Students are identified through a screening process as well as through parent and teacher nomination.
- One school ran a very successful programme. That involved a transparent selection process where children were picked to join groups. The current programme was based on the Autonomous Learner Model Optimising Ability George T Betts  
 “The Autonomous Learner Model for the Gifted and Talented, an approach to helping students become problem solvers through divergent and convergent thinking. Among basic principles of the model are emphases on self esteem, social skills, student interests, and broad-based content topics. Each of five dimensions of the model is analyzed: (1) orientation (understanding giftedness, group building activities, self-understanding, program opportunities and responsibilities); (2) individual development (learning skills, personal understanding, interpersonal skills, career involvement); (3) enrichment activities (explorations, investigations, cultural activities, service, adventure trips); (4) seminars; and (5) in-depth study. Sample worksheets and grading requirements are among items appended.”
- Two schools used “Mathletics”.

### **How was progress monitored?**

- GloSS testing was carried out. The timing of this varied from school to school. Some did this twice a year others once. It was used by some schools to measure strategies for Addition & Subtraction, Multiplication and Division and proportions and ratios.
- AsTTle testing was carried out by five of the schools visited. A common approach was. “Testing in the first half of term one and again in term 3 and term 4. Term one test results were used by most to set targets for each year level for the year. Targets were reviewed after term three testing and analysed after term four testing. From here a report is created to show, the shifts and if the targets were met. This information was shared with the staff and with the BOT”
- Two schools were using e-asTTle, with five wanting to use it but were either on the waiting list to become involved or their computer infrastructure/ and or broadband capabilities were not up to the required specifications.
- PAT testing was carried out in seven of the schools visited. This was typically done in March. Several schools used this data based on stanines to report progress to staff, the BOT and in their analysis of variance.

- GloSS testing, AsTTle test results and PAT results were typically analysed to form groups for cross grouping. This was especially so in forming remedial and extension groups.
- Several schools had basic facts testing carried out regularly each week. Some had basic computation testing and basic facts testing completed once a term. In most cases these results were analysed and monitored recording how children were progressing.
- Pre and post tests were carried out for different strands. In some cases these were created on asTTle while others were teacher created.
- All schools visited used accumulated data to monitor progress over the time at school. Musac was the most common system used.

**Question 3:** What were the implications for the teachers and senior management in the year 6 to 8 area of the school?

- Deciding on relevant resources. Ensuring that these were relevant to the New Zealand curriculum, were affordable, were current and were value for money.
- The time involved over the past few years in introducing the new curriculum and more recently the implications of National Standards becoming mandatory. All schools were working through this process.
- Ensuring all teachers had the expertise to understand and teach the mathematical concepts in all strands necessary in the year 6 to 8 area.
- Unfortunately reality dictates that all teachers are not equal. Several schools visited had a strong feeling that the (supposedly) 23 teacher training institutions in NZ and the influx of overseas trained teachers meant that quite a few professionals were limited in their training and ability to teach mathematics.
- Because of the varied ability of teachers ensuring that sufficient support and mentoring was available.
- Maintaining resources considering their high usage in classrooms, and ensuring budgeting allowed for this.
- Ease of use and access to computerised teaching and analytical tools.
- Selling the idea of cross grouping to the community.
- To ensure adequate funding was available to allow staff to attend relevant professional development in mathematics, be it numeracy, the new curriculum or now National Standards.

**Question 4:** What were the financial implications for the BOT? How did other schools manage this?

- The financial outlay on texts and resources.
- The continual need to update computerised systems so they can be used effectively and efficiently. This is especially relevant to computer operating systems which are constantly being upgraded. This includes funding necessary internet capabilities.
- Ensuring that funding is available to move with the changing requirements of the education system. A classic example currently is the broadband requirements needed for schools to introduce e-asTTle and how many schools throughout the country do not yet have this capability. There was a huge

inequality between the schools opened in the last 10 years and those who have some buildings 80 plus years old.

- To source expertise in advising schools on their actual needs in the ICT field and how to future proof for even the next three years.

**Question 5:** Were these programmes actually making a difference?

In short, though different in their approach in many respects, all of the schools visited felt the programmes being offered in their school were making a difference. All of the schools had school wide data to prove this.

In drawing that conclusion all schools also felt that how they approached the teaching of maths was work in progress and there was always room for further improvement. Probably one of the positives of the current school curriculum is that schools do have the ability to develop a best fit approach for their own school.

There was a concern about the coverage of all strands in mathematics and there was a conscious effort by all schools to ensure that this was met.

**Question 6:** What changes could Karaka School implement to enable us to benefit the children of Karaka School?

### **Benefits**

The major purpose of the school visits was to reflect on what was observed and establish whether implementing such practices would be of benefit to students. By reporting back to the BOT and teachers, what would best fit our schools learning culture would be identified. This exploration is aimed at considering how other schools with year 6, 7 & 8 students develop programmes- the procedural aspects, selection, process, funding, and the objectives of learning and what programmes they offer. The observations were aimed at understanding actual practices. Linked to the study was a review of any current relevant literature. By merging both the practical and the theory, this would a basis to analyse what is being offered in Karaka School's learning environment.

### **Links to issues important to the school and questions now for the staff and BOT.**

- Can Karaka School adopt any of these innovations to further improve an already successful senior school?
- To further investigate any of programmes and practices. If so arrangements would be made for other staff to visit.
- Are there areas that could be improved on, in providing for both remedial and extension programmes in mathematics? Having recently invested a considerable sum in introducing Rainbow Reading programmes, could it be established, if there were other equally successful programmes in other curriculum areas such as mathematics?
- Is more funding needed to purchase additional resources in mathematics?
- Having invested heavily over the last ten years in ICT how have schools of similar size and Decile moved and where to from here? How is broadband service acquired capable of operating such programmes as e-asTTle?

### **Conclusions drawn in regard to mathematics**

- Mathematics was generally running well in all of the schools that were visited – a real privilege.
- The most common approach was that numeracy resources were in wide use in the year 6 to 8 area for the lower achieving students.
- Most schools had adapted these resources for use in their school to meet their needs.
- Several schools were using teacher's aides under teacher supervision to assist with the lower groups.
- Cross grouping seemed to work well.
- Not one particular programme similar to (Rainbow Reading in schools) was seen, that could be purchased off the shelf to run in a school with the use of teacher aides and staff leadership.
- Some schools had the beginnings of programmes that had been developed internally, sometimes with the assistance of local maths advisers.
- When visiting schools one could not conclude that one maths text was better than another. Teachers had a wide variety of excellent texts in use and the school had usually decided on one or two particular texts to use as a main resource. This was mainly because of ongoing cost and affordability.
- There were indeed some excellent texts, many written by New Zealand teachers for New Zealand schools and in line with the new curriculum. An inventory of the most common seen in use has been included.
- The best programmes in action seemed to draw on a variety of best fit texts and resources.
- All schools were closely monitoring new resources as they became available.
- E-asTTle seemed to be a very efficient teaching tool in assisting in establishing the needs of students and ability of students. Most schools did not use it as they were either on the waiting list or did not have the ICT systems/specs capable of running it.
- A real positive was that all schools visited were willing to share their schools mathematical programmes and were quite proud of what they were achieving.
- There is a definite concern among schools that the 20+ teacher training institutions are not turning out teachers of equal ability in teaching mathematics.
- Constant developments in IT capabilities and program development is fantastic but in reality schools are struggling to keep up to date and up to speed. This especially applies to broad band capabilities needed for some programs.
- Schools are far from equal in their ability to provide these resources. Schools in the country or even in some of the outlying areas just outside our major cities are certainly disadvantaged because of the lack of accessible infra structure. Most relied heavily on locally raised funds.
- It does not always pay a school BOT to be too proactive in keeping up to date as when assistance finally comes on stream they often miss out as they have done just a little too much at their own cost and are not deemed needy enough.
- There is a wide variety of resources and services out there available to schools in both mathematics and IT and schools are often left to their own devices to make very important decisions regarding the purchase of valuable assets. These have not always proved to be the best decisions.

#### Appendix A

**Main Resources Used:**

Numeracy Kits and related activities. Many of the related materials had been developed by the local Mathematics advisors.

There was no common resource used apart from the numeracy support Material. Most schools drew material from a wide variety of available resources and texts ranging from the old tried and true texts to the latest available. Listed below is a copy of some of the main texts/ resources noted from the investigation. These are in no particular order.

- [www.nzmaths.co.nz](http://www.nzmaths.co.nz)
- Numeracy resources as listed

<b>Book Name</b>	<b>Date Updated</b>	<b>File size (KB)</b>
<a href="#">The Number Framework</a>	17 Mar 08	PDF 502
<a href="#">The Diagnostic Interview</a>	17 Mar 08	PDF 788
<a href="#">Getting Started</a>	17 Mar 08	PDF 464
<a href="#">Teaching Number Knowledge</a>	17 Mar 08	PDF 570
<a href="#">Teaching Addition, Subtraction and Place Value</a>	17 Mar 08	PDF 608
<a href="#">Teaching Multiplication and Division</a>	17 Mar 08	PDF 1311
<a href="#">Teaching Fractions, Decimals and Percentages</a>	13 May 08	PDF 1340
<a href="#">Teaching Number Sense and Algebraic Thinking</a>	17 Mar 08	PDF 569
<a href="#">Teaching Number through Measurement, Geometry, Algebra and Statistics</a>	13 Aug 07	PDF 888
<a href="#">Enriching the Number Framework with BSM</a>	17 Mar 08	PDF 1117
<a href="#">Home-School Partnership: Numeracy Handbook</a>	1 Aug 08	

- No Nonsense Number Series, and No Nonsense Number Series;  
S de Gouveia, J Andrews, and J Callaghan  
Essential Resources Educational Publishers Limited  
[www.essentialresources.co.nz](http://www.essentialresources.co.nz)
- New Zealand Curriculum Mathematics Series 1997: M.J. Tipler; S.C. Timperly  
Caxton Educational [www.caxed.co.nz](http://www.caxed.co.nz)
- National Curriculum Mathematics Series 2007: K Catley and M.J. Tipler  
Caxton Educational [www.caxed.co.nz](http://www.caxed.co.nz)
- Maths Matters Series: B. Brooker, C. Butel, P. Carson  
Caxton Educational Publishers 1990

- School Mathematics Series: Learning Media , Ministry of Education, Wellington
- Start Right Workbooks: Years 3, 4, 5, 6, 7, and 8  
Mathematics for the New Zealand Curriculum, Phyl Haycock:  
ESA Publications (NZ) <http://www.esa.co.nz>
- Maths Plus Series for New Zealand Schools: F. Grant, H. O'Brien  
Horwitz Martin 2000
- Figure It Out Series: Learning Media Limited 2003  
[www.learningmedia.co.nz](http://www.learningmedia.co.nz)
- Using Maths, Exciting Real Life Maths Activities: W.Clemson, D. Clemson,  
O. Cundale, L. Berry, M. King ticktok Entertainment Ltd 2004
- Dragon Maths Series The New Zealand Curriculum: W. Geldof 2005  
Sigma Publications Limited 2005 [www.sigmabooks.co.nz](http://www.sigmabooks.co.nz)
- NZ Primary School Mathematics Series: H. O'Brien and G. Purcell,  
reproducible black line masters in addition, subtraction, multiplication,  
division, number and open ended problem solving.
- Enrich- E- Mathics Series: A Joshua  
Pearson Education Australia
- New Zealand Mathematics Reflects the Numeracy Project:  
R Ramsay, T. Rodgers, D Bruce  
Haese & Harris Publications 2005 [www.haeseandharris.co.nz](http://www.haeseandharris.co.nz)
- Mathletics [www.mathletics.co.nz](http://www.mathletics.co.nz)
- Numicon [www.numicon.co.nz](http://www.numicon.co.nz)
- Otago Maths Problem Solving [www.maths.otago.ac.nz/pc/](http://www.maths.otago.ac.nz/pc/)
- [www.nzmaths.co.nz](http://www.nzmaths.co.nz)

Please note there may have been others in use as well, and there is certainly a wide variety of resources available that I have not included.

## **Appendix B:** **Schools visited and those who responded to the survey**

**Why do you think the parents of year six students at your school choose to have their children stay for year 7 & 8? These are direct quotes.**

- “There is a real concern in our community about the two local schools catering for year 7 & 8 and parents feel that the children have a better chance of coping staying here for their year 7 /8 years.” ( three schools responded similarly)
- Two schools stated, “the expectation of the yr 7&8 level is high due to the leadership opportunities.”
- “They are given opportunities to become “leaders” and take on a responsibility which requires them to have to make decisions.”
- “Our parents have already made the decision to live in a rural area partly because of the type of schooling/life style that is offered.”
- “We already know the children and the parents know the teachers.”
- “We have communicated all the exciting learning opportunities.”
- “Our Yr 7&8 area is providing with a number of special learning opportunities.”
- “The Yr 7&8 children are involved in a number of things that the year 6 children look forward to.”
- “We have our own Technology area.”
- “We have an excellent reputation for student achievement at our local college, which we celebrate.”
- “Our parents keep their children here because they have always been here, they have younger siblings here, they prefer the smallness, they like what we have to offer in regard to sporting opportunities and some academic opportunities and there is an element of convenience.”
- “Confidence that the school could deliver the education the children required to be ready for college.”
- “Security for children in the small rural school setting.”
- “Opportunities provided being in a rural school – calf club, cross-country course across farm land.”
- “Opportunities provided in a small school – e.g. all children are able to play in sports teams, not just a select few.”
- “Because the school was small we had IEPs for every child & held 3-way interviews with parents every term. Parents with children staying for Year 7 & 8 didn’t think they would get this same level of communication from intermediate.”
- “ Children don’t have to travel far to get to school.”
- “Other than going private the only alternatives for our families are a year 7 to 14 school or an Area School.”
- “I think they stay to keep the children ‘young’ for as long as possible.”
- “Financial, leaving would increase uniform costs and potentially the cost of the bus.”
- “The numbers of peers was a huge factor for staying or leaving.”
- “Opportunity to participate in all sporting codes – not just the best selected.”
- “Strong Yr 7 & 8 teacher.”

**Why do parents of year six students choose to have their children leave at Year 6?**

**Key quotes are:**

- “Historical reasons through a sibling attending the local intermediate.”

- “In the past it has been mainly family thing – older brothers and sisters have gone to private schools so the younger one follows.”
- “The children enjoy technology e.g. metal work.”
- “It has been suggested that they go to an intermediate because they would be better suited their due to their social and behavioural issues.”
- “They are not suited to leadership roles.”
- “Parents who do pull their children do so to get them in to private schools whose major enrolment year is year 7.”
- “Often they are going to private schools that put pressure on the parents to start them in year 9 to gain a place, some parents see Intermediate as being able to offer more opportunities because they are bigger or that their siblings went there.”
- “There is also a feeling that if they send their children to Intermediate they will be able to go a wider range of High Schools.”
- “Larger numbers at intermediate meant more friends for their children.”
- “Sports teams were year levelled, not mixed.”
- “Opportunities available e.g. drama classes, dance festival.”
- “Private schools told them that unless they got their children in at Year 7, they may not get them in for the college years.”
- “Being at a bigger school may prepare them better for the large numbers at college some parents wanted their children at “named” schools.”
- “Because of impending enrolment schemes being introduced in local schools catering four students from year 7.”
- “Others would be – bigger school, more resources, more opportunities, more technology – often a perception thing and not necessarily based on any discussions with schools.”
- “Peers – with the small numbers staying this seemed to compound – 1 leaves and other seemed to follow.”
- “The perception that we could not offer the same opportunities – science labs / computer suites / gyms etc.”

## Appendix C

**Because several schools were visited in the course of investigations other unrelated interesting initiatives that were observed have been recorded.**

Unicycles: One school allowed all senior children to use unicycles during breaks.

School Wide News Broadcasts: Two schools had studios set up for school wide TV news broadcasts. One school did this on a daily basis. The older schools were obviously limited here because of the age of the buildings and wiring etc.

School Gardens: Four of the schools had productive vegetable gardens. One did this on a whanau basis.

Lizard garden: One school had a garden area specifically set up for lizards.

Outdoor Education: Seven of the schools had regular challenging outdoor education programmes. Several included water sports. One school had a strong winter and summer rotation which included skiing, tube riding, catching and skinning opossums.

Science:

Five schools had employed semi specialist teachers to cover physical and material areas of science. This was often done by rotating classes.

Music

Six of the schools either employed specialist music teachers or cross grouped to allow staff with musical ability to cover music.

Adventure Playgrounds.

Most had substantial adventure playgrounds, with the level of difficulty differing from area to area. Differing interpretations of OSH rules seem to apply in different areas of the country

Recycling/ Worm farms

Five of the schools were involved in recycling with one school having five different recycling bins. In one school recycling was driven by a small and active Green group within the community.

Weather Station

One school had its own weather station.

New Buildings and Amenities:

Seven of the schools had current or recent building programmes involving new swimming pools, new all weather turf on playgrounds; new bag bays to allow for old areas to be used for extra space for teaching etc. All of these projects were partially funded by the community raised funds, galas, trusts etc.

Pure Week

Where a teacher, teaches to a particular passion. e.g. drama, music, art, science, technology.

Appendix 4

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<http://www.edex.net.nz/files/What%20does%20a%20reflective%20principal%20do.pdf>

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<http://www.mes3.learning.aau.dk/Papers/Zevenbergen.pdf>