

SABBATICAL REPORT

TERM 4

2009

CONCEPT BASED INTEGRATED INQUIRY LEARNING THROUGH CURRICULUM MAPPING AND ITS ALIGNMENT WITH THE NEW ZEALAND CURRICULUM.

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PUKEKOHE HILL SCHOOL

Acknowledgements:

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Particular thanks to the Management Team of the school, and my appreciation to those senior managers and staff who so ably took up new roles during Term 4 of 2009, which in itself is a positive feature of the sabbatical process for other teachers and staff within the school.

Purpose:

The purpose of this sabbatical was to further develop my professional knowledge and leadership capacity in a concept based integrated inquiry approach implemented through a curriculum design process of curriculum mapping and investigate its alignment to the New Zealand curriculum.

The specific inquiry goals for the sabbatical were:

- How is the current concept based integrated inquiry approach being developed, aligned to the philosophy and pedagogy of the New Zealand curriculum as outlined through its Vision, Principles, Values, Key Competencies and actual Learning Areas?
- How have schools who are developing a concept based inquiry approach, adapted and refined their pedagogy and methodology both as a response to the New Zealand curriculum and their own professional development journey.

The following were key parts of the planned sabbatical programme:

1. Research and reflection on Pukekohe Hill School's current curriculum maps and the concept based integrated inquiry approach. This included a significant collation of documentation developed over 2005 – 2009 as a base for this research and reflection.
2. Reading and discussion to clarify alignment of the concept based approach and our overall curriculum mapping, to the intent and structure of the revised New Zealand curriculum.
3. Discussions with other school personnel who are on a similar professional learning journey in concept based development and curriculum mapping as part of reflection on our own school's development.
4. Meeting with and considering recent research by Heidi Hayes-Jacobs, author of 'Getting Results with Curriculum Mapping' as part of the reflection and analysis process.

Introduction:

The focus of this sabbatical application is closely linked to improving learning outcomes for students at Pukekohe Hill School through extensive reflection on the curriculum mapping and concept based inquiry approach that underpins teaching and learning at our school. The development of curriculum maps and the focus it gives to teaching and student learning continues to be of critical importance to the school. This development will be a significant component of professional learning for staff, and curriculum delivery over 2010, and into the future. The school's strategic plan has a very strong emphasis on curriculum mapping and alignment of the New Zealand Curriculum which is the focus of this sabbatical application.

The External Environment: National Curriculum Change

The current New Zealand Curriculum document has had a reasonably long gestation, which was influenced in its design and timing by a mix of educational and political factors. Some key timeline markers were the mid 1980 Curriculum Review which led to the Department of Education working on an overall curriculum framework, the 1993 gazetted framework followed by individual Essential Learning area statements, the 2003 Curriculum Stocktake recommendations to Cabinet, the 2004 Curriculum Project, and the 2006 New Zealand Curriculum draft.

When the 38 page draft NZC document was sent to schools for consultation in 2006, our curriculum mapping journey was already underway, and some of the factors that underpinned the draft curriculum were closely aligned to the factors that had led our school to develop curriculum mapping. These factors included the ability of the school as a learning community to take a higher degree of self management, control, and flexibility over what was to be taught, with an emphasis on inquiry learning strategies delivered through a major school based curriculum mapping initiative. We were encouraged in our professional development journey by the letter of the Minister of Education and Minister Responsible for the Education Review Office, Steve Maharey, which was inserted in the draft sent to schools and noted, "The directions for learning proposed by this draft offer teachers more opportunities to apply their professional knowledge. The proposed curriculum will allow them the greater flexibility to develop new and innovative teaching approaches, and to engage all students in rich and authentic learning experiences"

Of particular interest was the section of the draft entitled Designing a School Curriculum (Page 26) that stated, " While the New Zealand Curriculum sets the national direction for learning for all students, each school will design and implement its own curriculum in ways that will engage and motivate its particular students. Schools have considerable freedom in deciding exactly how to do this." This was seen as being closely aligned with the first somewhat tentative steps of what was to become a concept based integrated inquiry approach through curriculum mapping that was being developed by the school. Our development was seen as likely to be a good "fit" with the draft section that went on to state, that in designing a school curriculum, "Careful planning results in a school curriculum that is connected, coherent, and balanced and that reflects the particular needs and interests of the school's students and community" (P26) Further to this, the draft section on Designing a School Curriculum went on to state, "Curriculum design usually starts with the shared values and beliefs of the community or with an assessment of the learning needs of the students" and later on, noted, "Different schools will organise their learning programmes in different ways. Some will organise them in ways that integrate understandings, key competencies, and values across a number of learning areas ... the knowledge, skills and attitudes that students need for addressing real-life issues and in real-life contexts are seldom found within a single learning area".

For us, the statements by the Minister as part of the forward to the draft, and the curriculum design section from page 26, were seen as a significant 'green light' for our development and were shared in celebratory style with staff and the Board of Trustees. The less prescriptive nature of the draft compared to the existing curriculum statements was seen as more user-friendly for teachers, emphasised the importance of effective teaching, encouraged students to take an active part in identifying what they needed to learn, advocated stronger relationships and connections between our communities and school, and gave a clear mandate for curriculum design. As part of our own curriculum change process, we also recognised the tension between school based concerns which were highlighted during the curriculum stocktake review of an 'over crowded' curriculum, with its large number of achievement objectives, that mitigated against depth of teaching especially related to an inquiry mode, with the needs of 21st century learners.

Condensing the seven essential learning area curriculum statements into one document, reducing the aims and achievement objectives of the learning areas, and introducing the five key competencies of thinking, managing self, relating to others, participating and contributing, and using language symbols and texts, was seen as a positive response on a number of levels, including real concern at the 'crowded curriculum', meeting the needs of our students as 21st century learners, giving an increased emphasis to information technology as part of the learning process, encouraging integrated curriculum development, and acknowledging the importance of a values based approach.

An innovation of the 2006 draft was a vision statement. This was retained in the final document, with several additions to the original four vision components of young people as confident, connected, actively involved, lifelong learners. The new curriculum now also contains 8 statements of 'principles' – only 2 by name which were retained from the draft, although the intent is similar – that are to be the foundations of curriculum decision making and design. The acknowledgement and advocacy of a focus on values was another welcome aspect of the new curriculum which had resonance with the curriculum design being developed at our school. Through curriculum design and delivery, students were to be encouraged to value eight specified values areas and to act on them. Of particular interest for us were the values of excellence, inquiry, curiosity, ecological sustainability and respect, and that, "the specific ways that these values find expression in an individual school will be guided by dialogue between the school and its community. They should be evident in the school's philosophy, structures, curriculum, classrooms and relationships" (Page 10 of NZC 2007)

The designation of the 5 Key Competencies noted earlier are conceptualised as the capabilities needed to undertake a task or meet a demand. They can be seen to include skills, knowledge, attitudes and values needed to meet the requirements of a particular task. Competencies are performance based and shown by the actions of students in a particular context. The background to this seems to have come from the 2003 Curriculum Stocktake report which recommended that the essential skills should be modified from the then 57 essential skills in their 8 groupings to be more consistent with the essential

skills and attitudes of the Te Whariki document introduced for Early Childhood education. The Key Competencies were intended to be in alignment with an OECD research based model, and intended to integrate all aspects of learning rather than be more simply discrete skills and attitudes. The challenge for schools and classroom teachers is to develop the competencies in a wide range of contexts and to integrate them into the school's curriculum design within each learning area.

The Internal Environment: School Based Curriculum Development

This report aims to reflect on our school's own curriculum design and pedagogical journey within the context of mandated New Zealand curriculum direction. As we reviewed the direction of curriculum development from 2004, it was informed and influenced to some extent by national events such as the curriculum stocktake, but was also very much a local response to our focus on how best to prepare students to develop the skills for success as 21st century learners. A starting point had been a review of our school's Vision Statement. After a combination of staff, community, and Board of Trustees consultation and review during 2004, a new vision statement was agreed on, "To develop a safe and challenging community providing an environment that promotes opportunities for all to develop the skills to become responsible, independent, and enthusiastic lifelong learners who contribute positively to society". It is this vision that has been a guiding statement over 2005 – 2009, and is now identified for further school community consultation and review through our Strategic Plan in 2010.

As part of the curriculum review initiated in 2004, we considered teacher beliefs about teaching and learning, pupil needs including concerns at children's readiness for formal learning on entry to school, - as a side bar, we have introduced and refined a transition reception class model for all five year olds - community expectations gathered from school wide consultation surveys, issues around catering for gifted and talented students, research data about authentic learning tasks and problem based inquiry approach learning, teacher concerns about the complexity and negative consequences of a crowded curriculum, research about assessment which actually made a difference to student outcomes, and Ministry of Education priorities.

After discussion with staff and the Board of Trustees, a start was made on what has come to be our curriculum mapping journey, with the introduction for the 2005 year, of four 'Adventure Classrooms' at different student year levels, to trial a Concept Based planning and inquiry approach to curriculum delivery. The adventure class model was also a response to an ICT PD contract application being declined by the Ministry, that if successful, would have allowed and resourced closer collaboration with other schools and a larger uptake within our own school. The staff involved were volunteers and keen to explore different approaches with early "big idea" concepts over each term such as Community and Movement.

The success of this 12 month trial led to a professional development journey over 2005-2009 with a school wide approach to concept based inquiry learning which integrates the curriculum and is documented through comprehensive and evolving curriculum maps. This curriculum design approach has been heavily influenced by the research and writing of Heidi Hayes-Jacobs, and at Pukekohe Hill School has been led over 2005-2009 by external facilitator Chic Foote who heads Total Learning Concepts Ltd and is linked to Learning Networks. (West Auckland Education Centre.) Chic's skilled role in conjunction with the commitment of the senior manager of curriculum development at our school, has been critical in our development.

Failed Applications, Collegial Collaboration and Internal and External Leadership

As most Principals and teachers will affirm, changes to our curriculum and pedagogy are seldom if ever neatly packaged, delivered, absorbed, complied with and implemented in tidy time frames, or through an occasional professional development meeting. What is required is serious and challenging work, and time seldom seems to be on your side! Discussion, planning, documentation, trialling, and critical reflection are all part of this substantial change process. As well as the national developments in curriculum, noted earlier in this report that were influencing and to some extent driving local curriculum design change and professional development, and the brief introductory section above entitled Internal Environment: School Based Curriculum Development, there were also other factors that underpinned the Curriculum Mapping model that has been developed.

Three linked factors are noted in this section; collegial collaboration both within and outside the school, external personnel providing advice in an active, sustained consultancy role, and internal leadership taken up by school staff with Board support. From 2000 on, the school was involved in a number of contestable professional development contract applications, either as a lead school or a member of other cluster groups within our geographical area of Franklin, or in collaboration with schools in the greater Auckland area with whom we had identified a commonality of pedagogy, professional development focus and future direction. All these applications, through the ICT PD learning contracts and Extending High Standards Across Schools (EHSAS) were unsuccessful! With the significant investment of time and resources used in the preparation of these applications, I consider that the whole contestable process with its numerous flaws, including a winner and loser format with little regard to need, and an apparent bias against some regional groupings, to have been an especially poor and problematic model to deliver anything like effective professional development that would benefit teachers and their students throughout New Zealand. However, there are often unintended consequences and opportunities that can be developed, and such was the case with these apparent 'failures'.

All of these contract applications had some commonality of purpose and direction, with a focus on inquiry based learning, critical and creative thinking,

curriculum integration, developing higher order thinking skills linked to improving student achievement, improving collaboration within and across schools, emphasising mentoring, using internal expertise and external providers. The Adventure Classroom initiative that foreshadowed our progression into curriculum mapping, came from one such ‘failed’ application, when the Board of Trustees agreed to the teaching and learning approach being trialled, and financially supported the resourcing needed to set up each room. The following quotations help to capture some of our beliefs at this time. Guy Claxton wrote, “Many schools focus too much on achievement ... they need to create opportunities for young people to develop their learning stamina by working on real problems ... to reflect on and manage their own learning”, while Howard Gardner noted, “you have to take enough time to get kids deeply involved in something they can think about in lots of different ways”.

Our school’s initiative into curriculum design through the process of curriculum mapping, included a belief in, and commitment to ‘inquiry learning’. A 2006 Ministry of Education article : “Let’s Talk About: Personalised Learning”, defined this as, “Personalised learning involves thinking about knowledge as an active process. Students get to be informed, active participants in their own learning, they contribute to decisions about how learning works best for them, and they have a much better understanding of how they are progressing”. It was considered that through personalised learning, students will know how to take control of their own learning, families would be partners in this learning and that “teachers will have high expectations of every student, know how they learn, and adjust their teaching to meet students’ learning needs”. It was about this time that curriculum mapping consultant Chic Foote, who had worked with Heidi Hayes Jacobs in the United States in curriculum mapping and design, and an inquiry approach, became closely involved with professional development with staff over the next four years.

Defining ‘inquiry based’ education is reasonably complex as it can be filtered through a constructivist pedagogy, a problem solving approach, project based learning and numerous other variations. However, a key element is that it should be learner centred, and significantly reduce the ‘listen to learn’ paradigm of the classroom and provide real and authentic learning challenges and goals. Further, for teachers, inquiry based education should significantly reduce the paradigm of ‘talking to teach’, and encourages the teacher to take on a coaching and mentoring role, engaged in the same quest as their students.

So what is curriculum mapping internationally and for us locally?

This report aims to relate and to some extent compare the New Zealand curriculum and its structure and aims, with the concept based integrated curriculum inquiry approach that has been developed through curriculum mapping at our school. The evolution of curriculum mapping was pioneered in the late 1970’s by Fenwick English, but our own curriculum mapping journey

has been heavily influenced by Heidi Hayes Jacobs. Heidi, an American educator, is a leading, internationally recognised proponent of curriculum mapping. Her influence, including through New Zealand based workshops with senior staff and teachers, and through our ongoing association since 2004 with New Zealand mapping consultant Chic Foote, has been instrumental in the framework that we have trialled, refined and implemented across the school and in collaboration with other schools. On the web site set up by Heidi, www.curriculumdesigners.com, curriculum mapping is defined in a glossary section of mapping terms as, “a systemic process that can improve student performance by sharpening the alignment of all aspects of the curriculum to reduce repetitions, gaps, and strengthen the articulation of skills.”

Janet Hale, in web site www.CurriculumMapping101.com, defines curriculum mapping as, “An ongoing, calendar based process involving teacher-designed operational and planned-learning curriculum, collaborative inquiry, and data driven decision making” In her foreword to *Getting Results with Curriculum Mapping* (2004) edited by Heidi Hayes Jacobs, H. Lynn Erickson suggests that curriculum mapping addresses some of the most critical questions for any work team: “Who is doing what? How does our work align with our goals? Are we operating efficiently and effectively?” She also suggests that, “Primarily, mapping enables teachers to identify gaps, redundancies and misalignments in the curriculum and instructional program and to foster dialogue among teachers about their work” In the context of the American school district system, Ann and Jennie Johnson, writing about the Ankeny Community School District in a chapter entitled ‘Long Term Journey that Transformed a District’, from the same book, advocated that, “Curriculum mapping became the hub that focused the work of the district on enhancing student achievement, and the hub served as an organizing force for bringing together the group of dedicated professionals ... allowing teachers and administrators to become dreamers and confident risk takers in their quest to help all students become independent and lifelong learners” (Pp 50-51)

Writing in the context of American school districts, Hoyle, English, and Steffy, in *Skills for Successful School Leaders* (1994) suggest four reasons a systematic approach to curriculum development is essential: “To ensure continuity of instruction within a school and among schools, to ensure progressive skill development ... through continuity of instruction, to maximise the use of student time, avoiding unnecessary instructional overlaps, preventing gaps, ... and ensuring mastery of curriculum, and to provide a strong barrier against the problem of concentrating on one school or level of schools at the expense of the total system” (P. 84)

For our school, and in the New Zealand context of a national curriculum and associated pedagogy, the key platform that has underpinned our development, is that curriculum mapping for integration and inquiry enables learning communities to develop a curriculum design to suit the needs of our school and its community. It is not a simple ‘quick fix’, but is about systemic change. It is about ‘doing business differently’. During any curriculum change, it is important to realise that we are all learners, and as with all learners, the

process should be presented, introduced, discussed and refined in small enough steps to be sustained.

It is also important to appreciate and plan strategically around the fact that when a process such as curriculum mapping is introduced school wide, with all teachers in a learning organisation, there will be a range of 'buy in', and effective implementation. Marzano, Waters and McNulty (2005) observe that, "incremental (initial) change fine tunes the system through a series of small steps that do not depart radically from the past. Deep (secondary) change alters the system in fundamental ways, offering a dramatic shift in direction and requiring new ways of thinking and acting" (p.66) Curriculum mapping cannot be effectively established or implemented over a few meetings and related professional development, and mapping, and the change associated with it, is highly likely to alter how individual schools function in quite fundamental and perhaps unpredicted ways.

Dr Douglas Reeves (2005) outlines a series of 'myth busters,' relating to change that apply quite aptly to curriculum and organisational change in schools. One myth is that, "You can't make significant changes until you have buy-in from everyone", and Reeves goes on to suggest that the truth is more that, "Resistance to change is an organisational reality" and the volume (noise) often exceeds the quantity of resistance" Part of the journey should in fact be to 'celebrate the dissonance' from colleagues, and to accept robust and sometimes challenging discussion as part of the learning that is taking place, and recognise that for teachers, curriculum change and adaptation goes to the heart of their professional life and also has a personal impact.

Reeves also suggests that another myth is, "You must have perfect research to support a proposed change", but contends in reality, "that perfect research does not exist: Try it, test it, improve it, is far superior to waiting for the illusion of perfection. You need sufficient research and common sense". Another of Reeves' myths regarding change is, "The risk of change is so great that you must wait until you have things perfectly organised before implementing a change", whereas he suggests the reality is, "There is no risk free alternative. The risks of change must be compared to the very significant risks of continuing current practices".

Certainly, organisational or structural curriculum change is seldom convenient, is unlikely to be supported with unquestioning enthusiasm, is never risk free, and should be expected to be modified and refined over time if it is to be sustained. Peter Senge, in his influential book, *Schools that Learn* (2000) contends that, "If schools are to be successful in an increasingly competitive world – and if educators are to help students overcome systemic inequities-then schools must become organisations staffed by individuals who know how to learn and grow" (P.39)

So what does inquiry and integrated curriculum mapping look like at our school?

Besides the reality of the class and the teaching and learning in evidence, there are three key documents that best explain just what concept based integrated curriculum inquiry looks like through curriculum mapping at our school. The first is an introductory booklet entitled Learning at Pukekohe Hill, which sets out a school based background. The second is a large poster chart on display in each classroom. Originally prepared for a family open evening at the school which was attended by up to 1000 people, this poster sets out the key components of our curriculum mapping and inquiry approach. Thirdly, there is a comprehensive Concept Planning book which is prepared each term and is the key planning document for teachers. The process begins with a Concept – the big idea. There are eight concepts over a two year cycle. The curriculum maps for these eight concepts identify specific learning areas of the New Zealand curriculum to ensure coverage. As development has continued, these have not remained the same. Through the mapping approach, coverage of the curriculum is built in, as is a structured assessment focus over the year. The concept allows for varying interest based inquiries depending on class levels across the school, and also does not prevent more individual learning journeys.

Each concept has an Enduring Understanding that is an understanding to be developed school wide, and aims to develop a deep level of understanding of key concepts and ideas which are meaningful to learners at our school. Linked with this are Key Words and Essential Questions which underpin each concept. These help to clarify meaning as children's thinking is recorded and displayed, often with picture cues, and connections are made to the enduring understanding. Each concept starts with a series of Immersion experiences, which is a process of exploration and awareness that generates past and new knowledge, and leads to questions and inquiry for future development of skills and knowledge. Students are immersed in a range of experiences linked to the concept such as hands on, picture disclosure, visitors, field trips, video clips, books, music, songs and artworks. As part of immersion, students observe, explore, interact, view, read, role play, record, discuss and debate. As part of immersion and inquiry, each class establishes an 'I Wonder Wall' where thoughts or questions linked to the concept are recorded and displayed. In some junior classes, this has more teacher input, with for example, one class having a mystery 'wonder woman' who posts questions that the children find on their wonder wall in the morning! The I wonder wall is accompanied by a Word Splash display where vocabulary related to the concept is recorded and displayed for use in student writing and discussion.

In each room, there are Learning Intentions and Success Criteria displayed. These statements outline what students are learning and how students will know if they have met the learning intention. Children are encouraged to refer to the success criteria and to monitor their progress towards meeting the learning intentions. By making learning intentions and success criteria explicit, this allows for purposeful assessment, with a strong emphasis on formative

strategies that lead to a feedback and feed forward cycle. The Inquiry Process may be problem based or issue based learning. Aspects include a focus on 'what we need to know'. Questions are charted and displayed. Students may research questions as a whole class, in pairs, groups or as individuals. For some students the inquiry process needs to be modelled and scaffolded as part of providing for both the individual and differentiated learner. There is also a 'how will I find out' component, as the steps and process is planned, and possible resources are identified.

As part of each concept there is a Culminating Task, which is a final task asking students to apply identified skills to the concept and enduring understandings in a specific task. This is a feature which facilitates self directed, inquiry learning, with a focus on reflective and critical thinking. Clear criteria are identified to measure achievement and tasks are set in relevant and meaningful scenarios. Each task aims to be a problem or issue to solve or resolve that includes the application of skills and knowledge gained throughout the concept process.

Around this process are linked a number of other features which are allowed for through curriculum mapping. Thinking tools are identified with a teaching focus of specific thinking tools at different Year levels. Acknowledgement is given to 'the smarts' which is our own version of learning styles. ICT components are identified, assessment is linked to learning intentions and success criteria, with opportunities for self assessment, and assessment for learning – feeding forward and next steps for learning. A school virtues programme is in place, has linkage to the values of the NZ Curriculum and has themes that complement each concept of inquiry. The Key Competencies are included through the maps. An extensive skills and competencies rubric has been developed as an assessment tool which aims to assess students as knowledge seekers, group contributors, self directed learners and responsible information users. These rubrics have been designed as a continuum across Levels 1 to 4 of the curriculum for Year 1 to 6 students. The virtues programme noted above is also part of the approach to the key competencies.

A real strength of concept inquiry learning through curriculum mapping is a strong review process. This recognises mapping as a vehicle for making change and improvement rather than creating a more static and topic based approach to curriculum delivery. Over time, concepts themselves have been substantially altered, re-named, and tailored to meet the needs of students and local, national or international events and issues. As part of a critical self review process, new ideas have been introduced such as maps covering education for sustainability, a school assessment schedule including reporting achievement to the Board of Trustees, a re-design of reporting to parents format and documentation, including involvement of students as part of conferencing with parents and setting learning goals. Changes to thinking strategies have been developed. The action learning model initially developed was based on 6 key questions: K- What do I know?, W-What do I want to find out?, H-How will I find out? These 3, KWH are the 'get it' phase. The model continues with, A-How will I use what I have learnt?, and Q-What new questions do I have? These 2, AQ comprise the 'use it' phase, and L-What

have I learnt?, is the final 'sort it' aspect. To this framework has been added a core focus of question, dialogue, working together, imagining, and reflecting, which connect to these key questions and relate to the immersion, inquiry, processing, reporting and presenting and evaluation aspects of the inquiry model.

From the Heart: Teacher and Student Voice

As part a long standing schedule of reporting to the Board, a selection of teachers provide 'Classroom Highlights' presentations to the school's Board of Trustees at its monthly meetings. These take a variety of forms including written reports complemented with digital images, visits to classrooms by the Board with student, parent and teacher presentations and input, power point or multi media presentations of aspects of student learning and classroom practice. Parts of written reports with accompanying digital images are then included in Community Newsletters. Perhaps to best illustrate the development of concept based integrated inquiry learning and curriculum mapping over time, and to give a flavour of teacher and student voice, a selection of written comments from these reports are noted below.

"Our class is one of the Adventure classes at Hill, so we started on our journey to produce critical thinkers. The pupils are being challenged from the start and their research skills are improving by these challenges ... they are making the connection between the importance that cultures, diversity and unity play in communities. There is always a learning buzz, or 'organised chaos' as we call it" (Year 6 class)

"Term 1 saw the introduction of a new learning style for both students and teacher. We began by discussing the structure of this inquiry based learning style and what it might mean for our class. The concept of 'movement' which served as the focus for our inquiry was introduced and immediately inspired a wide range of possible learning pathways by the children. The 'immersion', or initial stages of the inquiry approach, is where the students were exposed to a number of activities and tasks that introduced new ideas, but also challenged existing ideas of what movement is. Coming together as a class to discuss what they had experienced and found out from their immersion (including a visit to Motat and several class visits by 2 parent commercial pilots with model aeroplanes) was a natural lead into the next stage of learning where children chose one of 4 possible pathways with relevant questions to research that related to experiences they had had through the immersion process. Attitudes and motivation towards learning have been exceptional. Children have unpacked knowledge through discussion, reading, and some very effective open questioning. Inquiry based learning is providing a foundation for some very stimulating learning for the children and a vehicle for them to develop and exercise critical thinking. I also believe Hill's virtues programme creates a foundation for children to build the skills required for mature interaction within the class, making for an effective learning environment." (Year 5 class)

“Although in its early stages, it is apparent that there are huge advantages in this enhanced method of teaching. Supporting the changes is a range of technology equipment that includes additional computers compared to other classrooms, digital cameras, tape recorders, and video camera. Children are using a range of technology as their ‘pencil case’. The children are encouraged to use higher order thinking, as is part of our school philosophy, and evaluate their learning to set new goals. The emphasis throughout the school is on children taking increased responsibility for understanding the learning context, applying new information, creating solutions, or asking further questions”

“The virtues programme has been included as have other areas of the curriculum, so that learning is integrated and relates to essential questions. Children are learning to ask open ended questions, find effective ways to source information needed and apply it” (Year 4 class)

“Our concept this term has been ‘Change’, and we have been able to integrate this in nearly all aspects of our learning. It may have been something as simple as the change in our appearance after a haircut or losing a tooth, or positive changes in our behaviour to help us learn better.

I, alias “Wonder-Woman”, always likes to challenge us with some questions as she thinks there are lots of good thinkers in our class. Sometimes she leaves questions for us on our ‘I wonder wall’ that we can all use to post our questions! Every time she needs our help, we put on our De Bono thinking hats, discuss with our peers, and note down our clever answers in our ‘I-Wonder book’ What’s more, we can at anytime write down the questions we have during the process of concept learning and put them on the I-Wonder wall. We always work together to find out the answers by using different resources or people.

Our inquiry has been around water. We have looked at how we use water at home and school. From this we have looked at the country of Niger in Africa, and how little water they have compared to us. We found that water is very precious and it is important not to waste a drop! To experience this tried to survive on an icecream container of water each for some activities during the day, like for drinking, washing their hands and washing paintbrushes. We certainly had to make some changes on how we used water, and all had a turn feeling what it would be like to carry a heavy container of water from a well each day, balancing a small container of water on our heads, and trying not to spill a drop! Our coin trail later in the term is to go towards helping the people of Niger and help make some practical changes for them through World Vision” (Year 1 Class)

Conclusions:

Our own journey was based on a substantial body of research, academic study, practical application internationally and in New Zealand schools, and a measured degree of, ‘let’s trial it and see’. The reality is that each school is different, and a strength of sustainable development is to be quite open and confident in an approach which encourages teachers to trial, reflect and

modify. Our journey has also been greatly assisted by the involvement of external facilitators, the commitment and leadership of senior management staff, and the collegial partnership of staff from schools who are also on a curriculum mapping journey. The New Zealand curriculum recognises the importance of school based curriculum design and teaching as inquiry, and gives schools some flexibility. It is to be hoped that this flexibility is not undermined by misguided politically based ideology, or agencies of the state such as the Education Review Office, or the perhaps unintended consequences of impending national standards which may result in a narrowing of the curriculum as well as being a failure in terms of raising student achievement, as so much international evidence suggests.

In the national context, a curriculum mapping approach and structure aligns the written, taught, and tested curricula, and can be seen as a tool for establishing and reviewing congruence between what is taught in classrooms and what is expected through a national curriculum and national standards. The structure and process of curriculum mapping enables individual schools to develop curriculum design which is aligned across all levels of learning within the school. It is an ongoing process which relies on input from all teams – likely to be curriculum and syndicate based – within the school. It has an emphasis on using and valuing the features and characteristics of the local school and community.

Curriculum mapping provides for coherent transitions and a learning pathway taken from the national as well as the school's own curriculum design. The process of curriculum mapping provides a framework from within which key components and guidelines for teaching and learning can be linked. It provides a vehicle to integrate all areas of the curriculum through a term based concept focus on big ideas and enduring understandings, and connecting learning within the school. Curriculum mapping, through its structure, maintains the focus on key literacies such as numeracy and literacy as outlined in the NZ Curriculum statement. It includes specific and focused learning intentions, detailed strategies and criteria, provides for differentiation, and provides an emphasis on the skills for learning and the application of key competencies, inquiry and thinking skills, and resulting content knowledge.

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