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Personalised Learning  
in a  
Web 2.0 Environment

A thesis  
submitted in partial fulfilment  
of the requirements for the degree

of

Master of Education  
at  
The University of Waikato  
by  
Liz Stevenson

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The University of Waikato  
2008

## **Abstract**

21<sup>st</sup> century schools face significant challenges as they move towards providing opportunities for learners which recognize and build on their strengths and abilities. The process of supporting young people to develop the desire and the confidence to recognise personal potential and to manage their ongoing learning is a priority. Communication and collaboration are key to learners becoming informed active participants in their own learning and experiencing successful outcomes in today's society.

Our old models of learning where pre packaged parcels of knowledge were delivered to students by teachers will no longer suffice. As we respond to the new meaning of knowledge in the 21<sup>st</sup> century and begin to view knowledge as an active process, it is clear that many of the top down structures and organisational practices present in New Zealand secondary schools need change. The idea of personalisation in order to support independent learners to reach their potential is a familiar one for many teachers and is one of the ideals which may have brought them into the teaching profession. However, the institutional contexts in which they operate can act not as a driving force for personalised learning but as a barrier to it. In seeking to find one possible way in which secondary school systems can be re shaped around the needs of the learner, this study examines the role of online mentoring with experts outside the school.

This small scale qualitative study uses ethnographic methods to gather data from twelve secondary school year thirteen physical education students and their teacher as they engage in an eight week online project with expert sports coaches at Auckland University of Technology. Eleven of the students were boys. In examining the impact which online mentoring might have on this group of learners and their teacher, rich data was collected via web transcripts, observation, image data and interviews.

The research findings reveal that students found a high degree of satisfaction with the process and placed value on having the opportunity to pursue personalised goals as

they worked with mentors in a collaborative online environment. Teacher behaviour and practice underwent change in the project with the teacher becoming repositioned within the group in the role of learner. In a process where authoritarian approaches were replaced by collaborative group action and inquiry, students reported an enhanced ability to think deeply, to manage their own learning and to relate in highly skilled ways with others. Students' perceptions about the ways in which they were working were analysed using the New Zealand Curriculum Key Competencies.

As students focused their inquiry past the level of curriculum goals and onto real world personal goals, several experienced a shift in perception concerning their own learning potential and expressed surprised at their own level of competence. The fact that eleven out of the twelve students were boys makes this shift in personal learning expectation worthy of further investigation in the quest for improving academic outcomes for boys.

Finally, this study may have relevance for the ways in which the Key Competencies have meaning in secondary schools. The study demonstrated that the emergence of competencies such as *self management* and *relating to others* was assisted by changes in teacher behaviour and action. As authoritarian approaches were replaced by a collaborative model where independent learning with others was supported, learners began to exhibit the personal competencies described by the New Zealand Curriculum (2008). These competencies which include *Thinking, Using Language, symbols and texts, Managing self, Relating to others and Participating and contributing* occurred as a natural consequence of a learning model which was shaped to fit the learner; a personalised approach to learning with support from online mentors.

## Acknowledgements

To the research participants, students, teachers and mentors, who enthusiastically embraced this study, I extend my sincere gratitude. Without your adventurous spirit this study would not have been possible. To the initial artist mentors and art students who pointed the way with such passion and delight, it has been a privilege to be a part of your community.

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*Ehara taku toa i tē toa takitahi ęngari he toa takitini  
My knowledge does not comprise of my solitary endeavours but of those of others,  
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# Chapter 1

## Introduction

*We can make our world significant by the courage of our questions and the depth of our answers. (Carl Sagan)*

### Overview of Chapter One

The chapter begins with an introduction and justification for the research, (1.0). This is followed in (1.1) with some background to Personalised Learning. In (1.2), the background to the research is explained. Section (1.3) deals with information on the researcher's background and in (1.4) the research context is described. The research aims appear in (1.5). Chapter one concludes with (1.6) where an overview of the thesis structure is provided.

### 1.0 Introduction and Justification for the Research

This study is an investigation into the impact on twelve secondary school physical education students and their teacher as they take part in an eight week project working with subject experts outside the school. The learning is personalised within an interactive online environment.

Web 2.0 refers to the group of social software tools which offer users the opportunity to communicate and collaborate online. According to Bryant (2006), Web 2.0 tools allow personalisation and rich opportunities for networking, offering considerable potential for addressing the needs of diverse learners. Garmston (2008) holds that collaborative cultures “successfully promote high expectations, a spirit of inquiry, and an unwavering focus on learning for both students and adults.”

The Ministry of Education's 2005 strategy document *Making a Bigger Difference for all Students – Schooling Strategy 2005 - 2010* provides the landscape for Personalised Learning with its emphasis on successful learning opportunities for

all students. In setting the direction for effort and improvement in schooling in New Zealand for the next five years the three important areas of focus are:

- All students experience effective teaching
- Children's learning is nurtured by families and whānau
- Evidence-based practices are used by all in schooling.

(Ministry of Education 2005: 3)

A more recent document, the Ministry's publication *Let's Talk About: Personalising Learning* (2007a) addresses the concept of 'successful learning opportunities' and what they might look like. It is suggested that:

“Students will have high expectations, take control of their own learning and be able to work with others. They will have a better understanding of the learning process as they identify the knowledge they have gained and also the next steps.

Parents and families/whānau will be partners in their children's learning, understanding how their children are progressing and how their learning can be supported at home. They will be involved in planning their children's futures and learning pathways.

Teachers will appreciate that all students can learn and have high expectations of every student. They will access and use knowledge about how well their students are achieving for future learning. Teachers will build inclusive learning communities where students support each other's learning. They will develop a wide range of teaching strategies, including using new technologies, and apply them creatively to support students' learning”. (Ministry of Education 2007a)

In planning for *all* students to experience effective teaching, many dimensions of change need to be addressed. Many of the structures and organisational practices of secondary schools need to reform. However, much of the most challenging work concerns supporting teachers to examine their beliefs about what constitutes effective teaching.

The Secondary Futures publication *Inspiring Teachers* (2007) suggests that “our current system settings tolerate failure for a significant minority of students” (p.4) and that there are few places in current accountability arrangements where educators are held to account for ensuring the success of each student. An

important concept here is the word *success*. If by *success* this means *success* in terms of a prescribed national curriculum and assessment system, then the question becomes - should teachers be held accountable for this as this task which may be akin to fitting a square peg into a round hole? Pressure by schools on teachers to achieve this impossible task is resulting in an overloaded and dispirited teaching profession. If, however, *success* is regarded in terms of students working on curriculum *related* personalised goals and moving towards achieving their personal potential, then teacher accountability for this task becomes relevant and reasonable. In order to achieve this more personalised approach however, many secondary school teachers must examine their beliefs about the nature of effective teaching and learning.

Professional learning initiatives for teachers are burgeoning in most schools. However, many of them fit old knowledge models of teacher prescribed learning and exhort teachers to do more in order to be 'better' teachers. This attitude is frequently providing 'the straw which breaks the camel's back' in terms of teacher workload. Rather than giving teachers yet more things to do, could it be time to do less and to reflect more on the teaching and learning models which are already working successfully for *all* students? There are plenty of innovative teachers in secondary schools who are skilfully demonstrating ways of facilitating and guiding learning rather than delivering curriculum content. However, they are severely hampered by a schooling system which was designed to deliver and assess discreet packages of information. These teachers, by virtue of the fact that they are committed to the task of teaching, are often not in a position of leadership where they can influence broad school change. In many cases, their innovative work in the school challenges the status quo and causes a feeling of discomfort for managers responsible for the efficiency of school systems. There is no easy answer. The challenge is to create a strong "system that actively supports teachers who create innovative opportunities for knowledge discovery; teachers who seek out learning experiences that match student interests and curiosity" (Secondary Futures 2007: 15).

Large organisations are often slow to change. However there is some urgency for reform. "...there is evidence that alarms the community, evidence that increasing numbers of students are not attending and the patterns of success and retention in

education point to a declining level of effectiveness of schooling” (Middleton 2008: 13). With regard to attendance and ‘success’, some sections of the community are more at risk than others. Boys are still 10% more likely to leave school with little or no formal attainment than girls (Ministry of Education 2007b). In 2006, 45% of Maori school leavers, 32% of Pasifika school leavers and 20% of European/Pākehā school leavers had no formal qualification (Ministry of Education 2007b). These figures show that in 2006, the proportion of Maori students leaving school with no formal qualifications was 2.5 times higher than for NZ European students.

New systems and learning models must now be capable of supporting lifelong learning for all students and all teachers. These systems need to be predicated on success for all. For this to happen, schools will need to support a wide and flexible range of learning options for students.

The research presented in this thesis describes one possible flexible learning option and explores *perceptions and actions of students and their teacher* during their involvement in an online partnership with experts beyond the school.

## **1.1 Personalised Learning**

Personalised Learning is not new. Generations of teachers have tailored the school curriculum and their teaching methods to meet the specific needs of their students. They have done this because, professionally, it has seemed the right thing to do. Teachers, as human beings first and foremost, have upheld notions of social justice and fairness for all students, sometimes working within education frameworks which have been at odds with their actions. What is new, however, is a government focus, internationally and in New Zealand, on personalisation as a tool for reform with the intent of making education services more responsive to learners.

Personalised learning is.....a powerful solution. It is a way of reforming the system to ensure that the learner is at the heart of it. Ultimately, personalisation cannot be seen as a stand-alone initiative. It needs to be understood as a characteristic and a culture of a whole learning system. (Leadbeater 2004: 10).

At the heart of Personalised Learning is the acknowledgement that every learner should have the chance to be the best that they can be, whatever their talent or background. The New Zealand Curriculum Document (Ministry of Education, 2008) stresses that the opportunity for all students to achieve is one of the principles which should underpin all school decision making:

The curriculum supports and empowers all students to learn and achieve personal excellence, regardless of their individual circumstances. (Ministry of Education 2005: 5)

The Ministry of Education's document *Let's Talk About: Personalised Learning* (2007a) suggests that the vision is for students to become informed, active participants in their own learning. It is envisaged that students will be encouraged to take part in decisions about their learning and to contribute knowledge about how learning works best for them. A key focus of personalised learning is to empower the learner to have a sound understanding of how they are progressing. It encourages individual aspiration to high standards, high achievement and lifelong learning. An important shift in the hearts and minds of teaching professionals is to recognise that '*Personalised Learning is not the betrayal of excellence, it is the fulfilment of it*' (Department for Education and Skills 2004: 7).

In responding to an evolving meaning of knowledge in the 21<sup>st</sup> century, personalised learning involves thinking about knowledge as an active process and one which offers equal opportunity for all students. It is concerned with the questions of what knowledge might be in the 21<sup>st</sup> century, how it develops, how it is used and who owns it. Jane Gilbert (2005), who suggests a new framework for "knowledge as a verb" (p.76), sets the importance of this changing perspective within a broader post-modern scheme of thought in today's society, a culture which is experiencing major social, intellectual and economic change:

One of these changes is that knowledge is changing its meaning. However, many of our other "big ideas" are also changing. For example, some of our most basic political concepts – democracy, equality, ethics, justice and so on – are developing new meanings.....The goal of establishing a common ground, a unified "one best way" that all can live by, is being replaced with a new emphasis on diversity, multiple positions and voices, on many ways to do things, make meaning, and just be. (Gilbert 2005: 17)

In helping to develop Personalised Learning opportunities, a strong case can be made for creating partnerships beyond the school. If we are moving towards seeing knowledge “as a form of energy” which is “produced not in the minds of individuals but in the interactions between people” (Castells (2000) as cited in Gilbert 2005: 35), then relationships with others become paramount. As well as providing the base for sound classroom relationships, this involves partnerships with families/whānau and with family support, social and health services. These partnerships provide valuable support systems for the programmes and initiatives which exist within schools, with community members working in roles which support classroom activity and the operation of the school. Partnerships with experts beyond the school, however, provide a door to learning in the outside world. Well managed, this extension of the classroom can offer learners a rich and engaging real world personalised learning journey. Conducted online, there can be the additional benefit of learners acquiring an extensive set of Information and Communication Technology skills (ICTs).

The changed culture of a collaborative partnership with community and subject experts requires examination however. It entails a philosophical shift of beliefs about the business of teaching and learning. Engaging in collaborative work with subject experts and sharing the responsibility for student learning necessarily involves critical teacher change. The role of the competent teacher as prime subject expert is challenged when the teacher is set in this broader real world context. The mind shift required necessitates a degree of teacher risk taking and a willingness to engage with flexible processes and collaborative cultures. For all teachers, Personalised Learning means a renewed focus on their repertoire of teaching skills, in particular, their management and facilitation of the learning experience. One such skill, the management of an online partnership with experts beyond the school may have the potential not only to actively engage, nurture and inspire students but also to have a significant impact on the personal development of the teacher as learner, the teacher as leader and the teacher as professional.

## 1.2 Background to the Research

This study investigates Personalised Learning online within the context of a senior secondary school physical education class. Informing the project was my four years of experience in designing online personalised learning environments for senior secondary school art students.

From 1999 to 2003, a series of art e-mentoring projects where senior art students received support and advice from professional artists over the internet had transformed teaching and learning practice in the Art Department at Trident High School. Student motivation and performance had shown significant, measurable improvement, and the culture of the department had become one where student self management, risk taking and sound group communication practices were the norm. Senior art students became independent members of a wider online artist community with the value in this arrangement being perceived by both mentors and mentees. The art e-mentoring projects are explained in more detail in the Researcher Background (1.4).

Towards the end of the third year of art e-mentoring projects, the Head of Physical Education at Trident High School had expressed real interest in working towards providing a similar online learning opportunity for senior sports students. From a research point of view, this idea appeared valuable in that it would provide the opportunity to test the value of the e-mentoring process in another area of the curriculum.

Consequently, the *Sportlink* project was developed and became the subject of this research. The concept for an online coaching room for senior sports students was accepted as a research proposal for a Ministry of Education e-fellowship in 2004, the inaugural year of the New Zealand e-fellowship initiative. The SportLink online sports mentoring project involved the Head of the Physical Education Department and a class of senior physical education students. It was developed as a partnership between Trident High School in Whakatāne and the Department of Recreation and Sport at Auckland University of Technology (AUT).

Social networks, established during online post graduate study, PG Certificate in e-Learning at the University of Waikato, had provided me with valuable new e-learning colleagues. One of these ex classmates, Peter Mellow, a lecturer in sport at AUT and co-author of *Alice's Room – Online Mentors in Class* (Stevenson, Mellow and Alonso, 2004), agreed to help find sports mentors for the students. The aim was to select coaches appropriate to the students' chosen sporting codes, to develop an online coaching room and for the students to receive advice and coaching towards their NCEA achievement standard requirements.

Early in 2004, I met with staff from the AUT Department of Sport, representatives from the New Zealand Academy of Sport and a representative from the Peter Snell Institute. The concept of e-mentoring was of interest to these two national sporting bodies who, between them, act as sports mentors for a large number of New Zealand's most promising athletes. It was of interest to them to explore online methods of coaching and mentoring. The meeting resulted in an offer from AUT management to set up a facility for the collaborative study using their Learning Management System, (LMS), *Blackboard™*. The understanding was that the student online coaching project SportLink would act as a pilot study for possible further use by the New Zealand Academy of Sport and the Peter Snell Institute. The project would inform them, and they, in turn, would become online mentors.

The Sportlink facility was developed by Peter Mellow at AUT. It was designed, constructed and tested over a period of three weeks where we collaborated extensively online. The site's primary design was as an interactive coaching room within the Blackboard™ LMS. Areas constructed were news, discussion, chat, notices and links to relevant supplementary websites. In addition, students were provided with a CD containing short video exercise programmes, DVDs and books on motivation. Within the Sportlink online coaching room, there were separate areas for different sporting codes, e.g. rowing, rugby, golf, snowboarding and rock climbing. This enabled groups of students to benefit from discussions centred on their personal sporting code – the area in which they performed and had a high degree of expertise. In a small percentage of students – expert communication was via mobile phone as text messages.

The work previously conducted in the online art projects had provided evidence of the power of images in developing group communication and consequently, considerable emphasis in the SportLink project was placed on the use of images both for coaching and the creation of relationships. Within the news area, fresh images of the students at work in their physical classroom were posted every week. Images of the mentors were placed in the relevant coaching rooms. Sixteen shot multi frame images were used as a coaching tool. Using a simple digital still camera, students took sets of multi frame images showing a technique such as a golf swing or rugby tackle. These were placed within a discussion for analysis by the expert coaches.

Again, as the art students had suggested, these sports students found that while the formal coaching aspect of the project was highly valued for its content, the aspect which made a lasting impression on them was the opportunity for personal contact, support and challenge from top professionals in the sporting field.

This thesis concentrates on the impact of the online environment on both student and teacher beliefs about learning with Information and Communication Technologies (ICTs). In contrast to e-learning approaches that replicate traditional delivery models, Web 2.0 tools offer users the possibility of communicating and collaborating in order to develop and share ideas.

The research was a qualitative study using ethnographic methods within an interpretive framework. The findings and recommendations may be of interest to future online learning partnerships both within formal educational settings and in the wider community. It could be of interest to educators at early childhood, primary, secondary and tertiary levels who seek to develop rich, powerful, student-centred learning experiences and those who are interested in personalising their learning environments by employing Web 2.0 systems. It could also be of interest to people who retire from specialist occupations and have a wish to continue sharing their expertise with the next generation of learners.

### **1.3 Researcher's Background**

While completing my teaching degree online at the University of Waikato, the possibility of using the internet to teach secondary school students was something

I had wondered about. So early in 1999 when an adult student in my exam level art class needed to return to the United States of America (USA) it seemed a workable solution for her to complete her art portfolio in the USA guided by my emailed task sheets, with examples attached as images.

Very shortly after this, my new role as Head of Art at Trident High School presented significant new challenges. Along with this new responsibility came a very large class of year thirteen art students. These senior art students were expecting to work across three different disciplines -- painting, design and photography – all within the same room and with just one teacher. The situation was complicated by the fact that student motivation was on the ebb and performance expectations were low. Without access to specialist teachers for these subjects, I wondered if the email lesson idea might be further developed into a website-as-classroom and if artist friends could be persuaded to act as online mentors.

Realising my lack of experience in this field, I enrolled in the University of Waikato's *'Special Projects in Information and Communication Technology'* taught by Nola Campbell. This step was of inestimable value as the e-learning curve for that year was significant. Acquiring the skills to develop and facilitate my new project became paramount and I was indebted to Nola, not only for her expertise but for her generosity in consistently replying to my requests for information and help. Not only did she help with information within her own sphere of knowledge but importantly, she offered key advice for my ongoing development as an e-teacher: "You can't know everything, and if someone asks you something you don't know the answer to – you just help them find someone who does" (Campbell, personal communication 1999).

Taking this powerful advice, I contacted a potter friend who was using MSN™ photo albums to show her work. This facility to show images with the capacity to write beside them was just what was needed for the e-mentoring project. Coached by the potter (via email) I was able to construct a free, simple, image friendly MSN™ photo album site and we had a tool to use. The Auckland Advertising Agency *Way out West* agreed to be our first mentors and *F7@WOW*, the first of many art e-mentoring websites emerged. Five other artist mentors joined us and

our online art community emerged. The students photographed their work, loaded the images onto a secure web page and the e-mentors commented alongside the work. The fact that MSN™ was a very simple platform became the strength of the programme in that everyone could use the process with relative ease. The communication process came naturally to the students – we were ‘speaking their language’ and the mentors were able to learn to communicate in this way with a minimum of ongoing support and advice from me.

With hindsight, it is easy to say “five other artist mentors joined us” but this initial generosity on the part of friends who were artists was a considerable leap of faith on their part. These initial mentors, who came from Auckland, Te Puke, Ohope Beach, Nelson and Austin, Texas, all expressed misgivings about their technical expertise, the type of advice which would be required, the amount of time it might take and whether they were ‘expert’ enough. However very soon, with extra support via email and phone, they became proficient with the technology and found that the students valued their personal support even more than they valued the content advice. It quickly became apparent to us all that having someone ‘there’ was a very highly valued factor. This realisation in turn provided strong motivation for the mentors to continue with their online work.

The e-mentoring community included the students, the mentors and myself as facilitator. There was a need for me to be able to supervise the programmes of work and be involved in the specialist nature of the discussions with the artist mentors. While these people were experts in their own art disciplines, they were not teachers and not familiar with the national assessment process for the art portfolio. Thus the situation required a communication network which was available to the whole group, students, mentors and facilitator. The MSN™ site with individual pages for each student proved to be an excellent choice for this task. Students had their own identity with a personal page but could also access the work of others and the comments of each of the mentors. As facilitator, I was able to guide and coach the participants, keeping the community lively.

Important practical advantages of the online mentoring system which quickly became apparent were to inform all of the ensuing projects. For example, the capacity to have all previous conversations available on a printable web page was

highly valued. As well, students found that having a thumbnail portfolio of their art work available on a single screen provided a reflective overview which was not possible when viewing the works in isolation in the classroom. Students accessing each other's pages found that the business of critiquing work online removed much of the anxiety they felt when discussing with their group face to face. They enjoyed reading comments mentors had left for other students and many found that these comments began to influence their own work. The group began to share the characteristics of a writers' or artists' 'set' in that a stylistic change emerged in the group's work and social change was evident in the way they went about it. A developing and 'organic' network of learning was established; *the group had developed some of the characteristics of an interdependent ecosystem interacting with each other on a variety of levels.* (Stevenson 2002)

One of the painting mentors was a retired deputy principal. She found that her work with the students inspired her to return to Art School and complete her Master of Fine Arts (MFA). Her work with us as a mentor prompted her to wonder if she too might benefit from some advice from one of the 'greats' of New Zealand painting. With the encouragement of the group, she approached a successful New Zealand painter who lives in New York and was able to benefit from his advice during her studies. Having completed her MFA, this artist continues to work as a mentor with the secondary school art students as she pursues her own professional art career.

There were many other discoveries too. I was very aware that I had begun interacting with the students in a different way. I needed to re-examine what I had been doing before and what I was doing now. In essence, I had stopped attempting to 'deliver' a course and had begun, with my colleagues' help, to facilitate learning. This had a significant impact on the culture of the classroom which quickly acquired a common, collaborative focus. It became a group of people moving forward together; students, teacher and mentors. I also recognised an *intangible* aspect of student behaviour which could only be described as '*well-being*'. This was first put into words by a student who said that she enjoyed working with her mentor because it was "not like school, it's more comfortable" (Stevenson 2002). The aspect of satisfaction was also voiced by a mentor who

said “It’s surprising what I’ve learnt from the students – I really enjoy working as a team” (Stevenson 2002). For me, as the teacher, it was the first time since beginning teaching that I had felt able to operate in a truly professional manner by offering the students the opportunities for learning that they deserved. My journal notes from this period of time (see Table 1.1) indicate pivotal personal change in the areas of thinking, relationships, energy and lack of stress, professionalism, lifelong learning, organisational change, and personal change.

**Table 1.1 Researcher’s journal notes from 1999 (Stevenson 2002)**

<b>Researcher’s journal notes</b>	<b>Explanation</b>
“I’m starting to think differently.”	New flexible thinking processes. An increased ability to reflect from several points of view. I described thinking in a ‘series of windows.’
“My relationship with the students has changed.”	Changed classroom culture, student ownership, the authority model disappeared, mutual respect in working alongside each other.
“I feel energised and excited about meeting with the students.”	Students were also energised and excited. Stress in the classroom decreased. We were all enthusiastic and happy - a friendly, collaborative atmosphere.
“This is the first time I have been able to operate in a truly professional manner.”	A major change in my satisfaction and sense of professionalism. I would not have remained in the teaching profession working in a traditional classroom.
“Anything is possible.”	Significant realisation. Raised expectations both for the students and myself. The beginning of a new field of study...
“We have our own community <u>inside</u> the system! With a door to the outside world.”	The realisation that technology had provided the opportunity for organisational change inside a hierarchical system; a feeling of independence, self management & freedom of choice.
“My change has made everything else change.”	Experiencing personal change, owning the problem and taking action. Taking leadership, planning the future, designing a model for success.

The F7@WOW project resulted in five significant factors being perceived as being of value by participants:

- The opportunity for students and experts to ‘meet’ (virtually), generating extremely high levels of motivation, curiosity and desire to develop the learning conversation.
- The facility to converse asynchronously allowing the students to frame thoughtful/considered comments or questions and ‘experts’ to first reflect, sometimes research, and then ‘speak’ at a convenient time.
- The communication value of text supported by images
- The availability of the web conversations retrospectively and the fact that they could be printed and kept
- The learning value to the ‘experts’ as they came to grips with the new technology, worked as a team and gained new insights from the students.

Three particular factors were identified as barriers to the successful implementation of the online projects:

- Technology issues for teachers and students such as unreliable internet connections
- Difficulty for students and teachers in accessing computers when they were scarce or were provided in a suite instead of the classroom
- A perceived lack of ICT skill on the part of the mentors.

The role of facilitator was noted by participants as an important factor and one which directly affected the degree of success of the initiative. The role was likened (by one of the mentors) to a subway planner managing trains travelling in different directions. The important aspects for good facilitation were planning with clear instructions, timing, (including clear start and finish times – to the hour), clear expectations for all concerned, the speed of feedback for both students and mentors and strongly ‘people focused’ online communication models. My own perception of the role at the time was that it was similar to planning a party

where everybody brings a dish; inviting a good mix of people who have something to offer each other, putting together an interesting shared menu, being ready on time and helping to facilitate the conversation.

As a result of these experiences alongside my developing understanding gained from academic study and within the context of my practical teaching, I was in an informed position to undertake the research that is reported in this study.

#### **1.4 The Research Context**

This research began in 2004 in a decile 3 New Zealand co-educational secondary school. The school had a roll of 980 with 40% Maori students, 58% European and 2% other. Geographically, the school is described as semi rural.

The year 13 Physical Education (PE) class had a total of 12 students with all of the class being involved in the project. Eleven students were male and one was Maori. The European male teacher was Head of Department.

Students did not have access to computers within their PE department. Within the school, a suite of computers was available and could be booked but this facility was in high demand. Consequently, it was decided to use a portable pod of wireless laptops which could be set up in a meeting room.

#### **1.5 Research Aims**

This research aims to investigate the impact which an online partnership with experts might have on students and their teacher. Operating within a personalised learning framework, the group's activities were examined by asking the question: *What does Personalised Learning online mean for students, teachers and teacher – student relationships?*

By the time I began this research, my work with classroom based online groups working with mentors had led me to form a tentative hypothesis that the use of Web 2.0 communication tools which enable a personalised approach to learning with mentors outside the school can result in learners experiencing an increased desire to learn, an ability to manage their own learning and an increased sense of

well-being. In order to test this hypothesis, it was important to collect rich data and hear the voices of the participants themselves as they explained their experiences of learning online with mentors.

Specifically, the research questions are:

- What value do students find in personalised online learning with experts beyond the school?
- How can personalised online learning with experts beyond the school contribute to students becoming informed, active participants in their own learning?
- What contribution can personalised online learning with experts beyond the school make to 21<sup>st</sup> century teaching and learning in New Zealand?

The research, which is a qualitative study using ethnographic methods, within a constructivist paradigm, involved web transcripts, observer journal, interviews and images as data. The image data is further discussed in Chapter 4 – Methodology.

## **1.6 An Overview of the Thesis**

Chapter One has introduced Personalised Learning, and described the interest which the Ministry of Education has in Personalised Learning. My earlier work with online Personalised Learning projects has been examined.

Chapter Two presents a review of literature related to changing notions of knowledge, the impact of technology on our beliefs about learning and the subsequent changes in teachers' work. Literature related to Personalised Learning and online learning which has significance for secondary schools and secondary school staff is reviewed.

Chapter Three explores the methodology for this qualitative study, which results in an ethnographic model within a constructivist research paradigm. It also describes the participants, the setting, and the methods used.

Chapter Four presents the findings using a selection of the original image data sheets, selections from the web transcripts and the participants' own statements. There is then an analysis across these statements drawing out the relationship with key learning competencies.

Chapter Five discusses the findings from chapter 4 and explores their relationship to some of the literature reviewed in chapter 2. The research questions are addressed and the findings are interpreted with a view to the contribution which personalised learning in an online environment with experts might contribute to 21<sup>st</sup> century teaching and learning in New Zealand.

Chapter Six offers some conclusions based on the findings and makes some recommendations for personalised learning online within secondary schools. There are suggestions for further research.

## Chapter 2

### Literature Review

#### 2.0 Introduction

Literature included in this chapter is presented in six main areas. Outlined in the chapter below, the six sections are 1) The big picture – a global, web-enabled playing field; 2) Changing ideas about knowledge; 3) Technology's impact on our beliefs and practices about knowledge and learning; 4) If knowledge is changing, then teachers' work is changing too; 5) Changing in what ways?; 6) Personalisation of learning. The literature chapter concludes with a summary of the main points from the reviewed literature.

#### 2.1 The Big Picture – a Global Web-enabled Playing Field

Increasing globalisation, communication and collaboration has 'flattened' the world, according to Friedman (2005), former foreign affairs columnist for *The New York Times* and author of *The World Is Flat: A Brief History of the Twenty-First Century*. Friedman has been influential since the mid-'90s when he began to examine the intersection of technology, financial markets, and world trade. "This thing called globalization," he says, "can explain more things in more ways than anything else." In an interview with *Wired* magazine, Friedman explained to Daniel, who was a contributing editor at the time, what his 'flat world' analogy was about:

Several technological and political forces have converged, and that has produced a global, web-enabled playing field that allows for multiple forms of collaboration without regard to geography or distance - or soon, even language. (Friedman in *Wired* interview with Pink 2005b: 1)

According to Friedman (2005), this web-enabled playing field has been caused by the convergence of political events and a whole set of new technologies. He viewed the fall of the Berlin Wall on (November 9, 1989) as instrumental in tilting the worldwide balance of power towards democracies and free markets. Making significant contribution too, were the development of the Internet and the

creation of a global fibre-optic network. Subsequently, the creation of interoperable software applications has allowed people to communicate and collaborate, share knowledge and refine their work in completely new ways. This, says Friedman, has major significance for companies, countries and individuals.

With our new found ability to communicate and collaborate globally a resulting organisational shift can be seen in a movement from primarily vertical (command and control) value models to an increasingly horizontal (connect and collaborate) models of operation. The resulting changes to society as a whole require us to come to terms with a new processes and a new paradigm of post modern thinking. Gilbert (2005), writing about the changed role of knowledge in the twenty first century, paints the all encompassing extent of the new paradigm with a suggestion that many of our other “big ideas” are changing too, including “some of our most basic political concepts - democracy, equality, ethics, justice, and so on.” (p.17)

A key emerging feature of our new ability to communicate nationally and globally is our increasing ability to “see the big picture” and in this “conceptual age,” to grasp the “relationship between the relationships,” thereby weighing up different “shades of grey” (Pink 2005a: 14)

This meta-ability goes by many names – systems thinking, gestalt thinking, holistic thinking. I prefer to think of it simply as seeing the big picture. (Pink 2005a: 137)

This big picture, which includes rich communication environments provided by increasingly sophisticated technologies, is resulting in a change in the way we do things and also a change in the way we ‘are in the world’ (Garvey-Berger 2008). When we are able to gain a number of varied perspectives on issues we are less likely to engage in breaking apart problems and perceiving them as isolated fragments. Our old assumption that this would make a complex task more manageable is being replaced by a more holistic view and the movement towards systems thinking.

Systems thinking, or big picture thinking, provides us with a broader view and an understanding of the inter relatedness of problems. Systems thinking can help bring clarity to situations which are bound by “invisible fabrics of interrelated

actions.” (Senge 2003: 7). An example of systems thinking can be seen in the way we perceive a thunderstorm. While there are individual parts of the storm which can be named, these same parts are components of the whole storm. We can understand that the darkening sky and freshening wind will result in rain, and that the rain water will travel down streams to further destinations. All of the events are separated by time and place but they are connected inside a pattern – each event influencing the rest even when hidden from view. We can understand the system of the thunderstorm in its entirety rather than having to describe each isolated component. Schools as communities can be regarded as complex systems; our developing skills as systems thinkers can help to achieve more holistic views of educational change.

In dealing with complex systems, Davis (2008) suggests we need exponential thinkers at this stage of educational change and that it is imperative that we nurture connectors and collaborators. In expanding our understanding of how to do this, he offers a model from complexity theory in order to highlight the differences between complicated and complex systems. The characteristics of complex systems can provide us with some new language with which to describe the ‘genre’ of personalised learning:

**Table 2.1 Comparison of complicated and complex systems (Davis 2008)**

<b>Complicated systems</b>	<b>Complex systems</b>
Mechanical	Adaptive
Machine metaphors	Ecosystem metaphors
Linear	Exponential
Input output flowcharts	Cyclical feedback loops
Efficiency seeking	Sufficiency oriented
Progress minded	Growth minded
Reducible	Non compressible

“Complexity theory offers new concepts such as self-organisation and emergence that may assist schools to find more holistic ways to sustain reform and improvement” (Bower 2006: 61).

In complex systems, things are in a process of growth and change; in order to work with knowledge in this way, we must be capable of doing this personally. Just as we need new pedagogies, we need new language and models with which to describe our newly evolving initiatives and changing teaching practices.

It follows that if ‘big picture’, complex thinking helps us get a deeper understanding of the events in our external world, it consequently has significance for personal teacher development too. As systems thinking educators we become capable of taking a wider perspective on an issue; we are able to include more variables and to test more assumptions. We are able to ‘hothouse’ our ability to make informed choices and move with greater confidence towards self-managing our ideas, our beliefs and the direction of our lives (Kegan 1994). We become able to view our actions from “the ‘outside in,’ as a whole; to see our relation to the whole; to see the relation of the parts to the whole” (Kegan 1994: 152-153) rather than maintaining the perspective of our own part from the “inside out.” This shift of ‘mind’ or *metanoia*, from the Greek (“*meta*” – above or beyond, and “*noia*” from the root “*nous*” – of mind), meant, for the Greeks, a fundamental shift or change, or more literally, *transcendence* (Senge 2003: 13).

This study attempts to take a big picture or systems view of the learning behaviours and attitudes of a group of senior secondary school students and their teacher as they engage in learning online with experts beyond the school. The picture gathered by assembling complex text and image data which is returned to the participants for their comment.

## **2.2 New Ideas about Knowledge**

“Knowledge and learning, once education’s domain, are now a key focus of business and government,” says Gilbert (2005), and we are now beginning to make sense of a completely new set of ideas about knowledge – what it is, how it develops, how it is used, what it is for, and who owns it. In this period of dramatic change, knowledge, which once served the aims of the economy, is becoming the

economy. What used to be the means has become the end. New technologies have transformed the division of labour and the relation between the human and natural environment. (Jaros & Deakin-Crick 2007: 424). They have rendered obsolete the notion of a 'job for life' and with it many old understandings of words such as 'profession, 'skill' and 'learning'.

Gilbert (2005) quotes sociologist Manuel Castells, who suggests in his book *The Rise of the Network Society* that knowledge is no longer thought of as a 'thing', developed and stored in experts, but should rather be seen as a form of 'energy'. Knowledge, as a series of networks and flows, is defined not through what it is, but what it can do. "It is produced not in the minds of individuals but in the interactions between people" (Castells 2000, as cited in Gilbert 2005: 35). Gilbert develops this notion further, suggesting that knowledge is changing from something we 'have' (a noun), to something we 'do' (a verb).

Siemens (2006) agrees and suggests that as we come to understand the changing nature of knowledge, we will need to review our work practices and also the spaces in which we undertake them:

Knowledge has changed; from categorisation and hierarchies, to networks and ecologies. This changes everything and emphasises the need to change the spaces and structures of our organisations. (Siemens 2006: v)

While Gilbert (2005), Friedman (2005) and Bereiter (2002) indicated that the future of learning may lie with flexible networks and learning ecologies, it is Siemens' (2006) 'connectivism' concept which describes networks as models of learning. With the establishment of this term, the freedom reappears to view *learning* in its entirety, freed from the shackles of its method of delivery. Networked learning can occur within any communication channel. It can be online learning, face to face learning or mobile learning, the important factor being that it survives in and thrives in complex environments and times of rapid change.

In changing our structures and spaces, Bereiter (2002) suggests restructuring school activities to resemble the working of research groups with teams engaged in collaborative knowledge building. He suggests that students working on real

world problems might operate like mini societies. In this way, schools could be reconfigured as “laboratories for testing designs for the knowledge age.” (Bereiter 2002: 462)

In examining these new ideas about knowledge, it is important for us to not leap ahead too far at the expense of our traditional forms of knowledge. These forms still matter, just not as an ends in themselves. If we do subscribe to the view of knowledge in motion, in a process of ‘being’ then this knowledge, rather than just being reproduced, will need to be combined with aspects of new thinking in order for the knowledge to be used and further new knowledge be created. In order to create new knowledge, learners must be able to communicate and cooperate. They must be able to “actively interact with [knowledge]; to understand, critique, manipulate, create, and transform it” (Bolstad & Gilbert 2008: 39).

### **2.3 Technology and Our Beliefs about Learning**

Technology in education has a significant history of being employed in alignment with our beliefs about learning. Originally applied in behaviourist modes alongside Skinner’s work (Ravenscroft 2001), computer technology was initially employed to support the belief in teacher control over what is learnt and how it should be learned.

More recently, Vygotsky’s (1978) social constructivist approach have been more in keeping with ideas of learners having some degree of ownership of their learning and employing technology to assist in their construction of their own understanding.

Since the advent of Web 2.0 social networking tools, however, users of computer technology have been caught in a process of continual discovery regarding the uses and benefits of being able to communicate and collaborate in new ways. Living in a ‘wired’ world both allows us and compels us to rethink pre-internet concepts of communication, time, space, access to information, possibilities for collaboration, networking and methods of decision making (Siemens 2006). It facilitates global commerce, can restructure the workplace and has the power to shift political systems. In microcosm, it changes family relationships and groups by providing personal communication networks which did not previously exist.

The internet as a medium for communication is, according to Anderson and Kanuka (2003), “as profound as any other invention in the history of humankind” (p.43).

The Net creates a new global context in which many fundamental aspects of our social, educational, commercial, and even spiritual existence is challenged, reshaped, and expanded. (Anderson & Kanuka 2003: 43)

### **Early work with Computer Mediated Communication in New Zealand**

Very early exploratory studies into the ways in which computers were being used in New Zealand classrooms, commissioned by the New Zealand Department of Education, suggested that students had little difficulty incorporating the technology into their learning. The report *Exploratory Studies in Educational Computing* (Department of Education 1987a) had this to say:

...teachers...believe that children have little difficulty in understanding and using this technology at an appropriate level. Students are clearly highly motivated to write when electronic publishing is possible. (Department of Education 1987a: 8)

Erikson (1987) also wrote at this time about her students sharing their ideas and making new friends using computers.

This is just the beginning; we have only started to explore the uses and effects of telecommunications in the classroom. The possibilities of the future are only limited by our imagination and our resourcefulness. (Erikson 1987: 32)

Early examples of computer mediated communication (CMC), which have informed this study, have been found in New Zealand teacher accounts from the early 1990s. These stories have painted a picture of a variety of curriculum related activities. Gifted students at Lincoln Heights school in Auckland were able to work with a tutor through electronic mail and were given the opportunity to study different subject areas (Le Seur, 1991). In an article, *Teleconferencing in Social Studies* Richardson (1990) described a collaborative study on migration and colonisation of New Zealand. In addition, it was observed by Leonard, Hellier, Moore, Thompson and Wilton (1991), that students who were educationally disadvantaged, who had subject specific difficulty, who were geographically

isolated or who spoke English as a second language might benefit significantly from computer-mediated communication. Leonard *et al.* (1991) were involved in a research project at Kelston Deaf Education Centre which examined written conversations between teachers and students. It was discovered that during this interactive teaching period using electronic mail, that not only were the improved feedback and writing aspects of interest, but that student learning behaviours had undergone change too. It was noted “that improvements also occurred in the areas of turn-taking, initiating topics, rephrasing and expansion” (p.43).

A notable New Zealand contribution to the field of computer-mediated communication for learning is seen in the 1992 - 93 *Water and Air Projects*, originally conceived by Nola Campbell and Gray Clayton of the University of Waikato. In collaboration with Rhonda Christensen and Gerald Knezek from the University of North Texas and Texas Center for Educational Technology in Denton, Texas, Campbell and Clayton designed an Internet based computer-mediated communication project offering 7 – 13 year olds the opportunity for global communication and collaboration in learning about each other’s water and air. Initially linking three classes in New Zealand, two in Britain and three in Texas, students began examining and sharing information about their water. The initial project culminated in an international teleconference, providing participants with the opportunity to speak to each other as well as members of the audience at the National Education Conference in Dallas, Texas. The Water and Air Project developed from eight classrooms in three nations in 1991-92, to forty-six classrooms in eight nations in 1996-97. Having been structured carefully, with modules of work and deadlines so that all participants were clear about their involvement and responsibility, the project endured with students from New Zealand, Australia, Bermuda, Canada, South Africa, Spain, the United States and the United Kingdom taking part.

A secondary school curriculum specific direction was taken by King’s College in 1999 when they offered an online course in bursary economics. Participants included students from Ämuri Area School in North Canterbury and five students from Diocesan School in Auckland. This pilot study continued in 2000 with six students from the South Island. In this development the school took the use of computer-mediated communication through to a distance education model where

the majority of the work was accomplished online – although the students from Diocesan School in Auckland used the material to extend their classroom studies. In taking this direction, it is important to note that the project had moved away from the earlier emphasis on communication and collaboration and was described in technical and ‘delivery’ terms by Johnstone (2000).

Lai (1999a), however, continued to write about the possibilities of using the Internet as a communication system. “Although the Internet is championed as a huge information archive, I believe its potential lies in its capability to help users reach out to other people” (p.10).

Lai (1999a) detailed the range of software tools which support different modes of communication, from synchronous to asynchronous, with systems capable of facilitating communication which is one-to-one, one-to-many, or many-to-many. He wrote about conferencing software which could be employed in supporting a shared discussion by giving participants access to a central host computer and becoming a venue for the posting of discussion comments. In this way, he said, computer-mediated communication had the potential to support a learner-centred environment.

Other benefits of CMC cited by Lai (1999b) could be found in the opportunity for participants to reflect before replying and in the need for learners to respond more specifically to the contents of the message rather than the attributes of the authors. The change in the speed of reply delivery, Lai explained, forced the learner into a reflective mode and produced the possibility of a thoughtful, well constructed reply. In addition, the written transcript resulting from an online conference could provide a yet further valuable source for reflection and recall:

If effective teaching and learning call for a way and a place to express and explore interests, to raise and respond to questions, to discover, practise and experiment with ideas and cognitive skills, to identify and examine relevant information and ideas, and to broaden and deepen individual ways of thinking about the world by providing the opportunity to consider and evaluate alternative views both privately and through interactive ‘live’ discussions, then certainly CMC more than qualifies. (Marantz & England 1993: 74 as cited in Lai 1999a)

## **A New Decade of Technologies**

Almost ten years later, new technologies as social software are providing avenues for communication for vast numbers of people who are confirming Lai's opinions. For most young people, technology is part of their daily lives. "Our students have changed radically. Today's students are no longer the people our education system was designed to teach" Prensky (2001). As "digital natives" who have spent their entire lives using computers, video games, digital music players, video cams, cell phones and other digital "toys," these students are, according to Prensky, often speaking a different "language" from many of their "digital immigrant" teachers (p.2).

Teachers who do make use of the internet as a tool for communication report seeing significant change in the way their students learn and also in the satisfaction which students report concerning the learning experience. The mentors too, value the experience. Burns (2006) emailed colleagues to see if they would act as mentors for her class in business writing. "I was amazed at the positive response" she said (p.39). Burns (2006) reports "that something fairly profound happened." Her students, who had not enjoyed their previous writing experiences, "genuinely appeared to enjoy writing to their mentors and did so even when they were not being graded" (p.39).

The students had begun to see their communication as meaningful. The importance of writing transcended the class and became a real-world, real-time exercise. (p.40)

These students also began to demonstrate a greater organisation in their writing and a more creative use of language as they became involved in an activity that focused on their personal goals and interests. Elements such as tone and language were appropriate as the students engaged in dialogue with professionals in their field who treated them as colleagues.

The power of these relationships with others was significant for this writing class. Burns was aware that she had never yet seen her students transformed by activities using publishing, word processing, or electronic presentation software. Yet she had discovered that e-mail, by its very nature as a tool of both self

expression and shared communication, “promises such transformative abilities as a student’s reflection on the mentoring project encapsulates” (p.43)

I loved this activity. My mentor is so cool...In all my other writing classes, I never had activities like this (sic)...Until we wrote to our mentors, I never saw any use for (English writing), but now I do. I know that writing is more than vocabulary and grammar rules. It is about ideas and communicating and how we show who we are and what we feel to people who do not know us...writing involves responsibility and thinking and commitment. (p.43)

Green, Facer, Rudd, Dillon and Humphreys (2005) in Futurelab’s *Personalisation and Digital Technologies* make a compelling case for focusing on the contribution of digital technologies for learning. Supporting Prensky’s stance on the close relationship between students and digital life, the Futurelab report notes that young people with access to digital technologies are already using these resources to tailor their informal learning to their own interests and to access information of relevance to them. In addition, they are communicating with people who can support their learning, sharing ideas and expertise within informal learning communities. (Green et al. 2005)

However, in putting forward the benefits of digital technologies for personalisation and learning, it is important to remember that this requires more than an investment in ICT. The technology itself will not effect change. It is the context in which it is used which determines the extent to which it achieves the goals of personalisation. Even with the provision of extensive ICT resources, the question is – are teachers ready to change the organisational structure of the traditional classroom sufficiently in order to allow students to engage creatively with the communication technology? The question of whether teachers have enough expertise themselves has been shown to be a surmountable barrier by studies demonstrating the power of students mentoring teachers. The Tech Angels project at Wellington Girls’ College, initiated by Principal Margaret McLeod, involves students in offering their time to help coach and support teachers in their use of ICT. (Feltham 2004).

## Web 2.0

Tim Berners-Lee's vision of the World Wide Web was for a tool which created and gathered knowledge through human interaction and collaboration. Web 2.0 is the beginning of the realisation of that goal. Web 2.0 refers to services which foster online participation in creating knowledge and in social interaction. These services have the ability to allow any user to organise online information in such a way that it is useful, meaningful and personally relevant. Web 2.0 tools such as *Wikipedia*, *Facebook* and *TradeMe* can deal with one of the web's inherent problems (infinite amounts of information) by capitalising on its possibilities (collective intelligence, variety of types of knowledge and the benefits of millions of people sharing a virtual space). Web 2.0 services, which include mobile phones and services such as *YouTube*, *Google* and *Flickr* are emerging almost daily – the one aspect of commonality being that they provide the user with mobility and multi channel environments for communication.

Social networking tools such as Facebook ([www.facebook.com](http://www.facebook.com)) support the extension or creation of social networks in an online environment. Initially thought to be likely to hold possibilities for forming new bonds with people from diverse geographical and social backgrounds, these online social environments are, in the main, being used to extend and consolidate communication in real-world social groups. Participants use a large number of networking tools within the system, share photo albums, plan events and create interest groups. *MySpace* ([www.myspace.com](http://www.myspace.com)) *Bebo* ([www.bebo.com](http://www.bebo.com)) and *Twitter* ([www.twitter.com](http://www.twitter.com)) have similar functions.

*Skype* ([www.skype.com](http://www.skype.com)) allows users to view and speak to each other using the internet by using a web camera and a microphone. Skype includes a text messaging function and includes the facility to send documents and attachments such as images. *iChat* is an Apple (MAC) application which allows the user to log in to the chat facility *Gmail* without a web browser. Older versions of the chat tools are *MSN Messenger* ([www.msn.com](http://www.msn.com)) and *ICQ* ([www.icq.com](http://www.icq.com)).

Blogs (web logs) facilitate the production of self-published information, extending the creation of information beyond traditional publishing methods. They can

foster dialogue and creative discussion between people from diverse backgrounds. Having features such as a comments section, trackback and permalinks helps to develop a community of interest which maintains an ongoing discussion. A strong feature of the blog is the typical use of imbedding the posting with links which concentrate on a specific field of interest. In providing this rich information source, blogs act as hubs of social contact and specialized information. Anyone can quickly and simply set up a blog using free software such as that provided at <https://www.blogger.com>.

A Wiki is a collection of web pages where people can contribute and edit knowledge. In essence, it is a very simple data base. As members contribute their knowledge, the wiki grows into a mine of useful data. This knowledge has the potential to be constantly updated and consequently has the possibility of never becoming obsolete. Wikis are highly collaborative and would not function without a community of users. They may be used by small discreet groups such as a class in a school or can be extensive with world wide participation. Wikipedia ([www.wikipedia.org](http://www.wikipedia.org)) is a key example. Wikis are simple to use and the software is freely available.

These examples of social networking tools are just a few of those which many young people use daily and have made part of their personal communication systems. In doing so, Green et al. (2005) at Futurelab suggest that “it is clear that for many young people their digital learning landscape already affords them a high degree of personalisation which is currently unacknowledged by their formal school experiences” (p.4).

The introduction of digital technologies also brings risks which must be recognised, caution Green et al. (2005). Varying levels of access to these tools in homes and schools may serve to reinforce existing inequalities. For this reason, access to these resources must be universal in order to ensure that the learning landscape is easily navigable for all. Despite these concerns, Futurelab believes that:

The relationship between personalisation and digital technologies has the potential to reshape the education system around the learner and to enable the learner’s voice to

be heard more powerfully in shaping the curriculum, contexts and practices of their learning both in and out of schools. (Green et al. 2005: 20)

## **2.4 If Knowledge is Changing then Teachers' Work is Changing Too**

If we take a new perspective on knowledge, this new point of view will consequently have significance for the ideas and policies which drive schooling. Today's students expect a greater degree of control over their own learning and the inclusion of new technologies in ways which meet their needs and preferences (Prensky 2005). In their use of the Internet and the World Wide Web, today's students are no longer passive consumers but active producers of knowledge (Gilbert 2005).

As a backdrop to this scene of progress, our industrial age model of 'one size fits all' has traditionally produced a long 'tail' of underachievement. Low achieving school leavers have traditionally occupied the low skill job sector. However, New Zealand, along with other countries, has experienced a period of major economic change with the number of production line or processing jobs being in rapid decline. Consequently there is an urgency for schools to quickly come to grips with new ideas about knowledge and learning if all school leavers are to become self managing, confident, capable citizens:

Where industrial societies were based on extracting and using natural resources in manufacturing, knowledge societies are based on developing and exploiting new forms of knowledge. The shift from one to the other is linked with a major decline in blue-collar forms of employment and an increase in job opportunities in the creative, technology, and service based industries. It is also aligned with new business practice and patterns of work. (Gilbert 2005: 25)

All of this suggests that much of what we do in schools will change; that teachers' work is changing. Thinking, problem solving, collaboration in teams and a focus on creativity and inquiry could be important features of future learning in a knowledge society. Using the notion of "networked societies," Siemens (2006) draws a picture of the process of educational change by placing his ideas

alongside powerful examples of other transforming networks such as music, news and media:

The most substantial changes will be felt in how we organise ourselves. The spaces and structures of society...will experience a different relationship with knowledge. Instead of relationships of control/monitor and cause/effect, these organisations require a shift in view to foster, nurture, and connect. Customers, students, and clients no longer tolerate pre-packaging (music, news, media). Knowledge set free enables dynamic, adaptive, and personalised experiences. (Siemens 2006: 5)

The transformation in our understanding of 'knowledge' which has metamorphosed from something we 'own' to something we 'do,' has resulted in a need for new pedagogies and new modes of learning, Gilbert (2005). If learners are to engage in thinking, problem solving and collaboration in teams, then much of what we do in schools must also change. Classrooms of passive learners and a focus on delivery of content will no longer suffice. Learners with a focus on creativity and inquiry need flexible, comfortable, well resourced environments and supportive, empathetic, well organised guides. It is clear that teachers' work is changing, that our learning spaces will be different, that schools and classes will be managed differently and may become multi campus. (Gilbert 2005).

Hargreaves (2003) supports the notion of radical change within our educational structures suggesting that hierarchical, top-down, pre-defined methods of operating will need to adapt. In the new knowledge-based society, hierarchical systems find it difficult to react and adapt quickly to changes. In contrast, flexible, personalised, responsive networks and systems can shift at speed and enable structures to stay relevant and current. Corporate structures and traditional education providers are seriously at risk if they continue to view knowledge as static and suitable for 'holding' and 'owning'. "*The pursuit of stability must give way to adaptability*" (Siemens 2006: 164).

## **2.5 Changing in What Ways?**

In a knowledge society, everyone needs thinking skills and skills for life-long learning. They need to problem solve, be self-motivated, work with others, create and innovate. They need to develop their talents in effective and powerful ways (Darling-Hammond 1993). Learners, according to Leadbeater (2004), will need to

be turned from passive recipients into active participants and for this to happen, our education system has to transform.

New Zealand's Minister for Education Steve Maharey, in a 2007 address to secondary schools principals, suggested that they as leaders had been offered a powerful tool for change in the new curriculum, in particular the Key Competencies. "The revised... curriculum offers you as leaders the chance to determine not just the what, but also the how of students learning" (Maharey 2007), but in saying this, there was recognition that schools have a long journey ahead:

For all the fantastic things that are happening in education today, our education system at its heart is still a one-size-fits-all model developed for the industrial age. It has served us well for many decades, but we need to recognise that society has changed and we must change with it. Our students need us to change. (Maharey 2007)

## **Relationships**

A new model of learning which moves away from a delivery style of classroom practice places the emphasis back on relationships. Relationships between teachers and learners and the relationships with others who might contribute to learning necessarily become a key focus. Hargreaves (2003) suggests that the required change must move in a strong humanitarian direction:

New roles also change the relationship between learners and those who support their learning: we can no longer speak simply in terms of teacher and taught....mentors outside the school are becoming of increasing importance. This is particularly so for students whose needs are hard to meet in the school – the exceptionally able and the disengaged, for example: external mentors can be vital in personalising their learning. (Hargreaves 2003: 11)

The UK Department for Education and Skills (DfES 2004) quote Goleman as arguing that schools must also attend to emotions as a precursor to learning and achievement:

Students who are anxious, angry or depressed don't learn; people who are in these states do not take in information efficiently or deal with it well. When emotions overwhelm concentration, what is being swamped is the mental capacity cognitive scientists call 'working memory', the ability to hold in mind all information relevant to the task in hand. (Goleman 2003: 8 as cited by the DfES 2004)

Siemens (2006) supports this notion with the concept that learning should happen 'in synch' with life. He suggests that there was a "natural structure of learning already occurring in learners which establishments unwittingly work against. Instead of augmenting and extending existing activities, learners are asked to step out of their life processes and engage in learning isolated from implementation" (Siemens 2006: 18).

The Futurelab group sums up the personalised approach as a direction which leads us away from 'telling' and 'filling the vessel' to a different relationship with learners. In a personalised approach, the learner is paramount and the focus is on support and guidance in order to fulfil learner potential

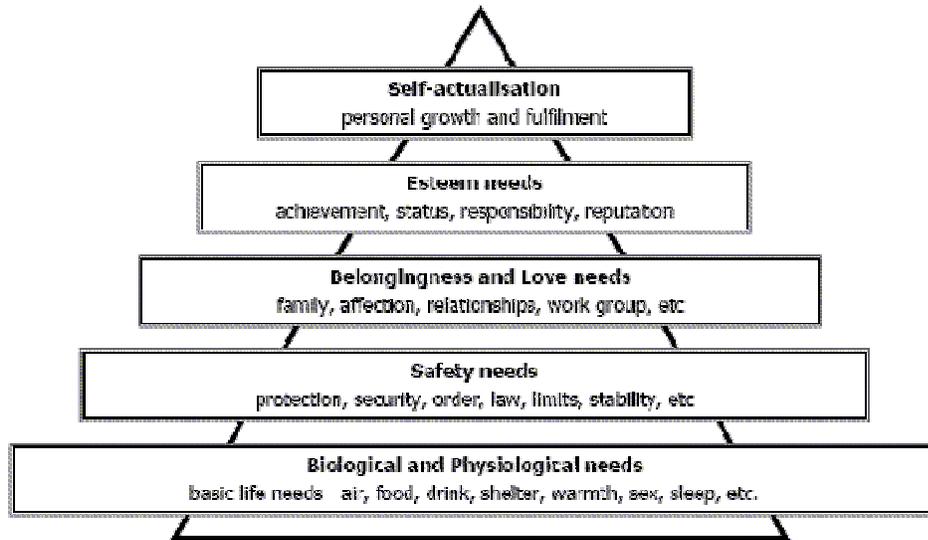
The logic of education systems should be reversed so that it is the system that conforms to the learner, rather than the learner to the system. This is the essence of personalisation. It demands a system capable of offering bespoke support for each individual that recognises and builds upon their diverse strengths, interests, abilities and needs in order to foster engaged and independent learners able to reach their full potential. (Green et al. 2005: 3)

### **Wellbeing: Maslow and His Relationship with Hauora**

The matter of reaching one's full potential was something which very much interested Abraham Maslow and resulted in his 'Hierarchy of Human Needs' (Maslow 1987). Believing that all people have a set of basic needs, physiological, safety, belonging and esteem needs, Maslow constructed a hierarchy which suggested that 'D needs' (deficiency needs) must be met in order for people to be able to grow into their potential and actualize the self.

Self-actualization and transcendence, according to Maslow, are "being" or "growth needs." They are ongoing motivators or drivers of behaviour. These needs can only be addressed once the four lower deficiency needs have been met

and neutralised. When this happens, physiological, safety, belonging and esteem needs cease to be motivators in people’s lives and consequently in their behaviour. Self actualisation, according to Maslow (1987) is the instinctive need of humans to make the most of their abilities. He suggests that when humans reach this stage of their needs framework, they work towards fulfilling their potential and becoming the best they can be and all that they are capable of becoming.



**Figure 2.1 Maslow’s Hierarchy of Needs (Maslow 1987)**

There is a significant relationship between Maslow’s theory of needs and the New Zealand Curriculum’s concept of *Hauora* – or wellbeing. In this model which is recognised by the World Health Organisation, the concept of well-being encompasses the physical, mental and emotional, social, and spiritual dimensions of health. *Hauora* is a Māori philosophy of health unique to New Zealand. It includes *taha tinana*, *taha hinengaro*, *taha whānau*, and *taha wairua*.

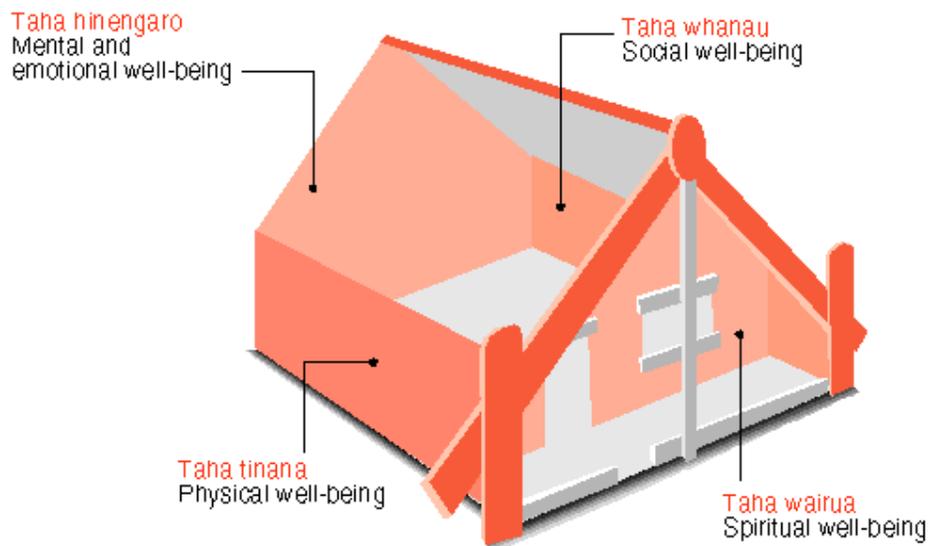
Taha tinana or physical well-being is concerned with the physical body, its growth, development, and ability to move, and ways of caring for it.

Taha hinengaro relates to mental and emotional well-being. It includes an emphasis on coherent thinking processes, acknowledging and expressing thoughts and feelings and responding constructively

Taha whānau or social well-being is to do with family relationships, friendships, and other interpersonal relationships. It is also concerned with feelings of belonging, compassion, caring and social support.

Taha wairua or spiritual well-being encompasses the values and beliefs that determine the way people live, the search for meaning and purpose in life, and personal identity and self-awareness (for some individuals and communities, spiritual well-being is linked to a particular religion; for others, it is not).

The fact that each of these four dimensions of hauora influences and supports the others is demonstrated by Durie's (1994) whare tapawhā model which compares hauora to the four walls of a whare, each wall representing a different dimension: taha wairua (the spiritual side); taha hinengaro (thoughts and feelings); taha tinana (the physical side); and taha whānau (family). All four dimensions are necessary for strength and symmetry (Durie 1994: 70).



**Figure 2.2 Whare tapawhā model of hauora (Adaptation of Durie 1994 from Te Kete Ipurangi 2008).**

Maslow's Hierarchy of Human Needs has been used as a tool for analysis in this research. However, the links between Maslow's rubric and the concept of hauora are significant. Table 2.2 displays the important relationship between the two. In Durie's (1994) model of hauora it is suggested that all four dimensions working together are necessary for a person's overall wellbeing while Maslow's work holds that the four 'deficiency' needs must be met for self actualization and the achievement of one's potential.

**Table 2.2 Comparison of Maslow’s D Needs (Maslow 1987) and Hauora (Ministry of Education 2008)**

<b>Hierarchy of Needs</b> <b>Maslow</b>	<b>Hauora (wellbeing)</b> <b>NZ Curriculum Document</b>
<p><b>Esteem Needs</b></p> <p>Fourthly, people have a need to be respected, to have self-esteem, self-respect, and to respect others. People need to engage themselves to gain recognition and have an activity or activities that give the person a sense of contribution, to feel accepted and self-valued.</p>	<p><b>Te Taha Wairua (<i>Spiritual Well-being</i>)</b></p> <p>Acknowledged as an essential requirement for health and well-being, wairua is about a person’s relation to unseen and unspoken energies. It also explores Maori relationships with the environment and between people.</p>
<p><b>Social Needs</b></p> <p>The third layer of human needs is social. This psychological aspect of Maslow's hierarchy involves emotionally-based relationships such as friendship and a sense of belonging. Humans need to feel a sense of belonging and acceptance, whether it comes from a social group, family members or mentors.</p>	<p><b>Te Taha Whānau (<i>Family Well-being</i>)</b></p> <p>Whānau forms the most basic unit of Maori society – the social domain. Traditional Maori social values emphasise collective action and responsibility – enhancing the well-being of the whole group. Whānau contributes to a person’s well-being and to their identity.</p>
<p><b>Safety Needs</b></p> <p>These needs have to do with predictability, order and the experience of an environment where injustice and inconsistency are under control. Safety needs are met when the majority of actions are familiar with unfamiliar occurrences being rare. In the world of work, these safety needs manifest themselves in such things as grievance procedures for protecting the individual from unilateral authority.</p>	<p><b>Te Taha Hinengaro (<i>Emotional/Mental Well-being</i>)</b></p> <p>In Te Ao Maori (the Maori world), the mind and body are inseparable with thoughts, feeling and behaviour being vital to health. Healthy thinking is about relationships and communicating emotions</p>
<p><b>Physiological Needs</b></p> <p>For the purpose of this analysis, Maslow’s lowest category of need ‘Physiological Need’ including the need for food, warmth and shelter has not been included as a category for data collection but has been referred to at the foot of ‘Safety’ needs in Table 2.2.</p>	<p><b>Te Taha Tinana (<i>Physical Well-being</i>)</b></p> <p>For Maori, the body and all things associated with it are tapu (sacred). The physical being supports a person’s ‘essence’ and shelters them from the external environment. The links between physical body and relationships are evident in tē reo (language) ie ‘whenua’ means ‘land’ as well as ‘placenta’, ‘iwi’ means ‘tribe’ as well as ‘bones’ and ‘hapu’ describes an ‘extended family group’ as well as ‘pregnancy’.</p>

It falls outside the scope of this review to make an in depth study of the relationship between Maslow's theory of needs and the concept of hauora. However the establishment of the fact that a relationship exists is important in terms of relating the findings of this research to the question of improving achievement outcomes for Maori.

## **2.6 Personalised Learning**

In a bid to reframe an understanding about what constitutes knowledge in the 21<sup>st</sup> century and consequently inform policy and discussion on education's future, a number of countries including the United Kingdom (UK), Finland, Germany, France, Canada and Denmark were represented at a seminar, *Personalised Learning: the Future of Public Service Reform* held in London, in 2004. It brought together the United Kingdom's Department for Education and Skills (DfES), the think-tank *Demos*, the research department of the Organisation for Economic Cooperation and Development's (OECD) and the Centre for Educational Research and Innovation (CERI). At this seminar, it became clear that the idea of personalised learning can mean many things, that it will be nurtured in different ways by different stakeholders and that the concept raises profound questions about the purposes and possibilities for education in the future.

It is not the purpose of this review to examine all of the pressures which come to bear on the notion of personalisation of learning. It is sufficient to note that personalisation could be examined from a variety of standpoints and stakeholder points of view. These include political and economic drivers, those seeking humanist reform, and the driver of technology itself. Personalisation could also be examined from a viewpoint of evolutionary shift as we become more aware of our human potential. One important driver which this review is concerned with however, is the business of teacher research.

While there is an abundance of research *about* teachers and teaching, research done by teachers that focuses on classrooms and the learners in them "has only recently made its way into the discourse about and formulation of educational policy" (Rust and Meyers 2006: 69,70). This has been due in part to a bias within the research community about the legitimacy of teacher research (Anderson and

Herr 1999), and in part to the fact that teachers have not “positioned themselves as critical stakeholders in the educational policy debate” (Rust and Meyers 2006: 70).

(Rust & Meyers 2006) put forward a strong argument for education policy to be politically and economically driven and informed by teacher research:

Teacher action research... enables teachers as individuals to enter policy discussions in their schools and their local communities and as a network to affect decision-making at local, state and national levels. (Rust & Meyers 2006: 70)

### **Successful Learning Opportunities**

The key focus of personalised learning is that all students will experience successful learning opportunities. It is envisaged that this will entail taking control of their own learning and being able to work with others. There is an emphasis on students understanding their own learning process, being able to identify the knowledge they have gained and also having the ability to identify their next steps. In order to create a learning environment which nurtures these aims, the New Zealand Ministry of Education is driving six major initiatives for schooling which nest inside their strategy document *Making a Bigger Difference for all Students – Schooling Strategy 2005 – 2010*, (NZ Ministry of Education 2005). The strategy’s emphasis on successful learning opportunities for all students provides a strong platform for a personalised approach to schooling where students are informed active participants in their own learning.

The Ministry of Education publication *Let’s Talk About: Personalising Learning* (2007a) addresses the concept of ‘successful learning opportunities’ and what they might look like. These were detailed in the introduction to this thesis. It draws together elements of existing initiatives within the New Zealand education system and suggests how they might, when viewed through the ‘personalisation’ lens, collectively contribute towards a genre of personalised learning.

Internationally, there is similar work happening. In 2005, the DfES released a white paper called *Higher Standards, Better Schools for All*. It sets the scene for personalised learning, focusing on increased choice for parents and students. The

DfES Personalised Learning website for the UK identifies their five components of personalised learning.

- Assessment for Learning
- Effective teaching and learning
- Curriculum entitlement and choice
- Organising the school
- Beyond the classroom

Despite some of the academic language and debate that surrounds it, personalisation is a relatively simple concept. Former UK Education Secretary David Milliband says this about personalised learning:

*High expectations of every child, given practical form by high quality teaching based on a sound knowledge and understanding of each child's needs. It is not individualised learning where pupils sit alone. Nor is it pupils left to their own devices – which too often reinforces low aspirations. It means shaping teaching around the way different youngsters learn; it means taking the care to nurture the unique talents of every pupil. (Miliband 2004: 8)*

This focus on shaping teaching around the ways in which different students learn has resulted in the adoption, in New Zealand, of a set of themes around personalising learning which are similar to those selected by the United Kingdom. It is interesting to see that in New Zealand, six themes have been chosen while the UK lists five (Table 2.4). The first five themes are similar in nature with emphases on leadership, engaged communities, curriculum, assessment for learning and effective teaching and learning. However, the sixth theme in the New Zealand *kete* is a *Highly supportive system* where the role of government and central agencies is seen as not running schools, but helping them build the capacity required to meet the needs of their students. This notion corresponds with Fullan (2002) systems model of *Tri Level Development*.

With this focus on building capacity to meet student need, it is surprising that also in this section dealing with ‘highly supportive systems’ where schools ‘transform themselves to better meet the needs of their students’, a very limited vision for the use of ICTs in schools is suggested. Examples given for making ‘effective use of

ICTs in the classroom’ are that they constitute an information resource and can provide on-line networks which ‘connect teachers and students.’ There is no suggestion of the powerful role that ICTs can provide in facilitating partnerships with community, cross campus learning and collaborative projects with others or the very real benefits they can contribute in developing thinking and creativity.

The UK model for Personalising Learning is similarly lean in terms of vision for the use of ICTs in schools. More concerning, however, is the fact that this model implies a desire to use the Personalised Learning agenda to transplant old delivery models of learning into the new era. The language used, for example, “ICT strategies to *transmit* knowledge and to *instill* key learning skills” (Table 2.4) suggests that the philosophy of Personalised Learning could get damaged in the space between vision and implementation.

**Table 2.4 Comparison of the Personalised Learning vision, UK & NZ**

<b>Personalising Learning UK</b> Department for Children, Schools & Families	<b>Personalising Learning NZ</b> Ministry of Education
<p><b>Effective teaching &amp; learning:</b></p> <p>An emphasis on strategies that develop the competence and confidence of every learner by actively engaging and stretching them. A focus on teachers’ repertoire of teaching skills, subject specialisms and management of the learning experience. Focus on a range of whole class, group and individual teaching, learning and ICT strategies to transmit knowledge, to instil key learning skills and to accommodate different paces of learning. For pupils - a focus on their learning skills and capability to take forward their own learning.</p>	<p><b>Effective teaching:</b></p> <p>Effective teachers know what works best for their students and continually reflect on and refine their teaching practice. Providing professional development for teachers, informed by research is a strong focus. The Literacy and Numeracy Professional Development projects are examples. They help teachers to enhance their skills and develop programmes that meet the diverse needs of students in their classroom and across the school.</p>
<p><b>Assessment for Learning (AfL):</b></p> <p>Means using evidence and feedback to identify where pupils are in their learning, what they need to do next and how best to get achieve this. In practice, this means obtaining clear evidence about how to drive up individual attainment; understanding between teachers and pupils on what they need to improve, and agreement on the steps needed to promote sound learning and progress.</p>	<p><b>Assessment for Learning:</b></p> <p>Having an in-depth knowledge of the strengths and weaknesses of every student. Good assessment provides feedback that improves learning outcomes and involves students in the learning process. Tools like asTTle (assessment tools for teaching and learning) and the ‘Assess to Learn’ project - to provide teachers, students and parents with information that accurately shows the achievement and progress of students. NCEA (National Certificate of Educational Achievement) - quality information for learning programmes, parents and employers.</p>
<p><b>A flexible curriculum:</b></p> <p>Vital if the benefits offered by tracking, intervention and tuition are going to be realised. Learning-focused (rather than content-focused) to promote 'real' learning situations that simulate virtual situations. Project-based approaches to the curriculum rather than discrete, one-off lessons. Using the curriculum to support a set of skills rather than as an end in itself, matching the aims of the National Curriculum to the areas of their learning profile. Using ICT to help pupils manage their own learning, such as through a virtual learning environment whereby pupils can communicate with staff more freely.</p>	<p><b>Curriculum:</b></p> <p>Key resource for ‘what’ students learn is the New Zealand Curriculum. The curriculum provides teachers with more opportunities to apply their professional knowledge. Also sets the direction for what will be taught in schools. Curriculum creates opportunities for teachers to build teaching around the needs of their students. Te Whāriki is an early childhood education curriculum that takes its starting point as the learner, the child’s own experiences and the knowledge, skills and attitudes that they bring to learning. ICT is enabling students to be more in control of their own learning and work at a level that challenges them.</p>

<p><b>Beyond the classroom:</b></p> <p>Building partnerships beyond the school is key to both supporting learning in the classroom and enhancing pupil well-being. This includes: guidance and universal support for every pupil, effective pastoral care, tackling additional needs with targeted or specialist support if necessary, lunchtime and after-school catch-up help and other extended learning provision, home-school partnerships, community partnerships, multi-agency support for the whole child</p>	<p><b>Strong and engaged communities:</b></p> <p>Strong partnerships between home and early childhood services and schools. Understanding where students ‘come from’, what drives them and what aspirations their parents and whānau have for them enhances their learning both at home and at school. ‘Team-Up’ is about providing information and resources to get families and whānau involved in and supporting their children’s education – from the early years to when they leave school and beyond. A focus on fully informing parents and equipping them with the knowledge they need to be involved in their child’s learning.</p>
<p><b>Organising the school:</b></p> <p>School leaders and teachers think creatively about school organisation, to best maintain high quality teaching and learning &amp; ensure that pupil performance and pupil welfare are mutually supportive. Creating these conditions for learning involves using workforce remodelling to build a whole-school team for better support of pupil learning and increasing the planning, preparation and assessment time for teachers; using ICT effectively; creating a clear, consistent policy on 'behaviour for learning' &amp; creation of environments where students feel safe and secure and can flourish.</p>	<p><b>Professional leadership:</b></p> <p>The role of professional leaders of early childhood services and schools is to provide leadership of learning, creating the conditions for personalising learning. A ‘First-time Principals Programme’ provides induction for new school principals. Professional learning communities, online communities (like LeadSpace) and leadership advisors all provide opportunities for principals to share experiences and good practice. A Kiwi Leadership framework is being developed to acknowledge New Zealand’s unique educational context</p>
	<p><b>Highly supportive system:</b></p> <p>The role of government and central agencies is not to run schools but to help them build the capacity to meet the needs of their students. At a system-level this has meant providing the physical resources and evidence base to support continuous improvement. As a result schools are transforming themselves so they can better meet the needs of their students. For example, by making effective use of ICT in the classroom both as an information resource and through on-line networks connecting teachers and students.</p>

In considering the scope and extent of the changes described in the Personalised Learning vision, it becomes clear that this course of action is not for the faint hearted. Leadbeater (2005) puts it this way:

It requires schools to radically rethink how they operate. Many of the basic building blocks of traditional education; the school, the year group, the class, the lesson, the blackboard and the teacher standing in front of a class of thirty children, have become obstacles to personalised learning. (Leadbeater 2005: 6)

Across most of our economy, people now work at different times, in different places with many working remotely through networked companies. Working practices have become more flexible and job descriptions more open. Schools remain one of the last Fordist institutions where great numbers of people all go at the same time and work, directed by bells, to centrally devised schedules. Personalised Learning demands organisational change:

“Personalised Learning means differentiated provision to meet differentiated needs. All the resources available for learning – teachers, parents, assistants, peers, technology, time and buildings – have to be deployed more flexibly.” (Leadbeater 2005: 8)

## **Chapter 3**

### **Methodology**

#### **3.0 Introduction**

This chapter explains the theoretical basis for the research and describes how the research was conducted. Section 3.1 states the research questions with 3.2 explaining the research framework within which the questions were investigated. 3.3 deals with the methodology and ties the research framework to schools of thought in the field of ethnography. Section 3.4 explains the relationship between the research questions, the evaluation criteria and the theory. The final sections in this chapter detail the practical aspects of the research.

#### **3.1 Research Questions**

The research questions which were investigated in this research are:

- What value do students find in personalised online learning with experts beyond the school?
- How can personalised online learning with experts beyond the school contribute to students becoming informed, active participants in their own learning?
- What contribution can personalised online learning with experts beyond the school make to 21<sup>st</sup> century teaching and learning in New Zealand?

The aim of this research is to evaluate the role of personalised online learning with experts beyond the school in a New Zealand secondary school context. This research framework for this study must accommodate complex data capturing interpersonal communication and communication which occurs in a virtual environment. The study has a focus on ‘how’ students are learning and how they ‘are’ in this learning environment. In this context, personalised online learning is viewed within the broader context of the changing nature of knowledge and the

way in which online learning partnerships might contribute to 21<sup>st</sup> century teaching and learning in New Zealand.

### **3.2 Research Framework**

With tertiary institutions offering a continually growing number of courses online, it follows that the majority of research into online learning is found within the tertiary sector. Tertiary institutions' financial investment in increasingly sophisticated technology is, of course, only possible when there is good evidence that the financial commitment is resulting in desirable levels of learning and public success. Consequently, there is some interest and some considerable value found in research which emerges from a positivist standpoint and deals with the learning product, not necessarily the learning process. Many researchers, however, feel that these methodologies are poorly suited to research in education and interested in taking a closer look at the actual process of learning, are choosing to adopt more naturalistic forms of inquiry in order to present a more complete picture of social reality (Cohen, Manion & Morrison 2000).

Learning online is not common in secondary schools with the result that there are few examples of research into online learning in schools. This is not to say that examples do not exist. Many secondary teachers employ inquiry methods within their teaching programmes which necessitate students working online in order to research and sometimes to communicate and collaborate with others. One possible contributing factor to the dearth of teacher led research in this field is the secondary sector's emphasis on curriculum and results with the consequence of 'teaching to the test'. This competitive climate can leave teachers stretched to capacity within highly structured and timetabled organisations where teacher worth is linked with results gained against national criteria. Secondary school teachers providing rich and diverse learning opportunities for students and assisting them to become self managing autonomous learners may find these goals absent in their professional development programmes and also in their teacher appraisal criteria. Herein lies a dilemma for the 21<sup>st</sup> century teacher, often fully cognisant of environments which nurture powerful learning but locked into an 'in house' performance based system. Large secondary schools with strict organisational hierarchies do not provide the type of supportive culture which welcomes more holistic, flexible learning initiatives.

An effective way to assist rigidly structured organisations to examine changing values is, rather than appealing to philosophy or conscience, to provide evidence of the worth of a changed model. If secondary schools have placed value on ‘learning’ rather than ‘remembering’ and that this has become the new goal, then examples of students succeeding at ‘learning’ will be of worth. This research is directed at informing that possibility and consequently uses as one of its tools for analysis, the *New Zealand Curriculum Key Competencies* (Ministry of Education 2008). The discussion of research question 4, *What contribution can personalised online learning with experts beyond the school make to 21<sup>st</sup> century teaching and learning in New Zealand?* is set inside the framework of the Ministry of Education’s publication *Let’s Talk About: Personalised Learning* (2007a).

Seeing the phenomenon of learning through new eyes in the 21<sup>st</sup> century, demands a new perspective from us. It asks us to move from our accustomed standpoint and put ourselves outside some of our old beliefs so that they can be examined. It is a lot easier to find that place to stand, where a new perspective can emerge, when there is a selection of pictures or scenarios to view. The examination of these pictures can help us to come to new conclusions.

This qualitative research, conducted in a natural setting, is interpretive and informed by constructivist theory. Constructivism places the learner as an active participant in the learning process, involved in the construction of knowledge. The constructivist paradigm can inquire not into ‘what’ has been learnt but rather what the learner has thought of the experience. Guba and Lincoln (1994: 110), suggest that constructivist research has the ability to identify and reflect on multiple realities which emerge from the interaction between the researcher and the participants and that the constructivist paradigm is well suited to social situations.

The study involved is a social situation where students and their teacher were engaged in dialogue within the face to face group and online with others. Much of the data captured was information relating to emotion, engagement and well being. Co-construction of shared meaning in this situation was important and the research framework needed to allow for that. Coleman, Perry and Schwen’s

(1997) perspective on constructivist research supports the method. They suggest the following beliefs are involved in constructivist research:

1. Values are of central importance in inquiry and always, whether recognised or not, deeply affect the outcome of any inquiry.
2. The context in which an inquiry takes place is unique to that situation; to view an event separate from its context is to miss the essence of the event.
3. The goal of inquiry is to understand and share different viewpoints about the situation being studied for the purpose of building a joint, sophisticated 'construction'.

(Coleman, Perry & Schwen 1997: 270-271)

The building of a joint sophisticated 'construction' in this enquiry necessitated making a very close analysis of what the participants were doing. Consequently, ethnographic methods were employed and a range of "interconnected methods" selected in order to get a better "fix on the subject matter at hand" (Denzin & Lincoln 1994: 2). This study portrays what it is like to be in a particular situation (Cohen, Manion & Morrison 2000) and to take part in the close-up reality and "thick description" (Geertz 1973) of the participants' actions, thoughts and feelings. This study, as far as possible, allowed events to speak for themselves instead of being judged or interpreted by the researcher. In order to do this, a model of data collection similar to that for a news documentary or photo essay was used.

### **3.3 Research Methods**

Within this learning environment, which moves away from a 'closed door' classroom to an interactive virtual space with other advisors it is inevitable that the relationship between teacher and students will change. After all, the group has changed – it now includes several experts, not just the teacher. The group dynamics consequently move more towards the mores of social discourse. In this learning environment, many of the techniques employed by teachers to help students learn become inappropriate. It is not necessary to construct learning games or strategies because the conversation is the game; the interaction is the strategy. When students fully understand their personal learning goal in the online environment with others they are able to pursue and manage their learning with support and guidance from their teacher.

If students are to be active participants in constructing their own knowledge, it is necessary for us to understand something about how that happens, not just that it does happen. This task is a comprehensive one when studying interactions within a physical classroom. However, when the classroom is expanded to include a virtual learning space and a second set of advisors, the task becomes extremely complex. In fact it becomes the task of describing and mapping a network of learning. In a study of learners within an online network, there is a need for a model of inquiry which is able to capture the actions, intentions and perceptions of the learners within it. Because the environment is extremely rich with a number of different dimensions, it is necessary to use a model which tolerates appropriate tools to capture the data. Ethnographic methods appear to be appropriate.

### **Ethnographic Methods**

Ethnographers immerse themselves in the life of the people they study (Lewis 1985) and seek to place the phenomena studied in their social and cultural context. It is usually necessary for the researcher to spend a long time in the field and to collect detailed, observational evidence (Yin 1994). In choosing to employ ethnographic methods, I was influenced by the fact that information systems researchers have recognised the value of the ethnographic method for studying information systems in organisations (Myers & Young 1997, Wynn 1991).

One of the most valuable aspects of ethnographic research is its depth. The researcher observes for an extended period of time, seeing what people are doing as well as what they say they are doing. This method is suited to this study as much of the data gathered, for example, facial expressions, gestures and fleeting groupings of students cooperating or communicating are not necessarily recalled or seen as notable by the participants. It is only when data which is gathered over time is presented to the viewer that many of these actions and recordings of emotions reach consciousness in the subject and are capable of being named.

Atkinson and Hammersley (1998: 110-11) suggests the following features of ethnographic research:

- A strong emphasis on exploring the nature of a particular social phenomenon, rather than setting out to test hypotheses about them.
- A tendency to work primarily with ‘unstructured’ data, that is, data that have not been coded at the point of data collection in terms of a closed set of analytic categories.
- Investigation of a small number of cases, perhaps just one case, in detail
- Analysis of data that involves explicit interpretation of the meanings and functions of human actions, the product of which mainly takes the form of verbal descriptions and explanations, with quantification and statistical analysis playing a subordinate role at most.

Lincoln and Guba (1985: 39-43) add the following:

- Studies must be set in their natural setting as context is heavily implicated in meaning.
- Humans are the research instrument.
- Utilisation of tacit knowledge is inescapable.
- Purposive sampling enables the full scope of issues to be explored.
- Data analysis is inductive rather than a priori and deductive.
- Theory emerges rather than is pre-ordinate
- Research designs emerge over time (and as the sampling changes over time).
- The outcomes of the research are negotiated.
- The natural mode of reporting is the case study.
- Nomothetic interpretation is replaced by idiographic interpretation.
- Applications are tentative and pragmatic.
- The focus of the study determines its boundaries.
- Trustworthiness and its components replace more conventional views of reliability and validity.

In this study, the methodological strategies are very much based on what is going on in the field by participating in the field. The participants’ examination of their web transcripts and image data are integrated into the design later where they provide important material for reflection during the interviews.

As participant observer, my role as technical support changed according to need within the group; this allowed for new observations which had not initially been anticipated.

Methods define which aspect of the phenomenon are especially relevant and deserve particular attention. At the same time they give an orientation for the researcher's practice. In ethnography, both are given up in favour of a general attitude towards the research through the use of which the researcher finds his or her own way in the life world under study.

(Flick 2002: 147)

### **Ethnography and Interpretive Phenomenology**

Ethnography and interpretive phenomenology have aspects in common. They are both exploratory and both use the researcher as the data collection instrument. However, ethnography concentrates on the individual view or the shared views and values of a particular culture and aims to describe the cultural knowledge of the participants, (Maggs-Rapport 2000), while interpretive phenomenology tries to uncover concealed meaning in the phenomenon, embedded in the words of the narrative.

The need to use these two methods arises from the fact that there are two distinct parts to the data collection in this study. There is a rich collection of images detailing learner actions in ten minute segments and there are also web transcripts which detail all content of the online communication (text and image) as well as the exact times that it occurred. This part of the data collection is purely ethnographic in that it concentrates on the routine daily lives of the group and allows for a number of aspects to be examined at the same time.

At this point in a purely ethnographic study, the researcher would look for some sort of order in the data or particular themes or patterns. However, in this study, the data was given to the participants to examine. Participants' responses to the data were then collected.

It was the responses to the data which were analysed using interpretive phenomenology analysis in order to reveal themes.

### **Data Collection**

In using ethnographic photo journalism methods, it was necessary to ensure that data was collected systematically and rigorously in order to heed advice from

Nisbet and Watt (1984: 14) to “guard against distortion of the full account in order to emphasise more sensational aspects.” Consequently, data was collected continuously via web transcript, observation, and time-based photographs. The collected data was available to participants throughout the project and also at the time of their final interviews.

### **Observation**

Observation provides a picture of the setting and can describe what is going on, who is involved, and when and where things happen. Observers see things which escape the conscious awareness of participants in an activity or gain information which participants do not find noteworthy. Observation can occur where the observer is a participant or non participant and where the subjects being observed are informed about the observation or not informed. In this case, the type of observation carried out was peripheral participant observation where the subjects knew they were being observed. Observations such as teacher or student comments, spontaneous groupings in order to share new information and instances where there were difficulties with the technology were collected in a researcher journal.

### **Peripheral Participant Observation**

Participant observation has been described by Denzin (1989: 157-8) as “a field strategy that simultaneously combines document analysis, interviewing of respondents and informants, direct participation and observation, and introspection.”

Jorgensen (1989: 13-14) suggests that an important feature of participant observation is that the study in which the researcher operates has “a special interest in human meaning and interaction as viewed from the perspective of people who are insiders or members of particular situations or settings.”

In the Sportlink study, I was a member of the group myself, acting as a peripheral participant observer. It was not until the interviews at the conclusion of the project that I became involved in significant dialogue with the participants. Being personally known to the students meant that my presence was not regarded as

unusual and my function within the group was seen as 'technician'. This role involved setting up the wireless laptops, assisting with connections and troubleshooting. My variety of practical tasks allowed my process of recording information as notes and taking images at regular intervals to go largely unnoticed. The students had acknowledged and valued the information they had gleaned from seeing examples from the previous artist projects and so our relationship was comfortably established. For the three weeks prior to the start of the project, I spent parts of each day in the students' PE class. The result of this extended contact should have made a significant contribution towards ensuring that as an observer, I had a neutral effect. (Burns 1997: 368)

### **Web Transcripts**

Transcripts from the discussions within Blackboard™ were processed daily. This was achieved by copying each participant's contributions into a personal file. The date and time of the posting was also copied directly from the web page. In this way, it was possible to view all postings made by a participant. These personal transcripts were kept alongside a complete transcript of the group discussion so that relevance could be established if necessary.

### **Photo Journal**

Photos of the whole group in action and individual photos of each participant at work were produced every ten minutes of the scheduled fifty minute period and more frequently if there was a change of activity. This meant that there was a total image record of all action and interaction for the duration of the project. This image record was available to participants along with their web transcripts before the final interviews.

The decision to time the photos in this way was influenced by Denzin (1989: 213-14) who posed the dilemma of theoretical presumptions which determine what is photographed and when, and which aspect is subsequently chosen for analysis. By selecting the times for the images and by presenting them to the participants for analysis, I hoped to avoid making presumptions about what might be analysed.

The use of images as photo and film was also found to be useful by anthropologist Margaret Mead. According to Flick (2002), Mead summarised the purpose of using cameras in social research as follows:

- They allowed detailed recordings of facts as well as providing a more comprehensive and holistic presentation of life conditions.
- They allowed the transportation of artefacts and the presentation of them as pictures.
- They were able to transgress borders of time and space.
- They were able to capture facts and processes that are too fast or too complex for the human eye.
- They allowed non-reactive recordings of observations.
- They were less selective than observations.
- They were available for reanalysis by others.

Mead's perception that images are able to capture facts and processes that are too fast or too complex for the human eye is built on in this study with the production of a bank of images which endure over time. Rather like the process of an animated cartoon, the images over time build a picture of participant action which can be scanned for patterns of behaviour. More revealing than a time consuming video, the still images recorded at regular intervals provide a keyhole view into patterns of action.

### **Privacy Issues**

Privacy issues concerning photograph sharing date back to the early days of photography when George Eastman marketed the handheld camera. Photography enthusiasts at this time had little expectation that their unrestrained photo taking, sharing and editing would create a backlash of privacy rights legislation in New York (Mensel 1991). Frequently targeted subjects were often the poor and the disempowered, who had their images traded and sold without their knowledge or consent. Misappropriation of images for product endorsement was not uncommon.

As digital libraries become commonplace and recent developments in technology allow groups and individuals to create their own publicly accessible image collections, issues of privacy and ownership become important issues for

clarification. These concerns are of equal or possibly greater interest to organisations with secure online platforms with regard to the availability and possible transfer of sensitive photographic material. Generally, learning management systems operated by schools and universities have limited protection mechanisms and images are able to be copied and shared in more public forums with relative ease.

Information ownership is a complex field relating to copyright, intellectual property, policy and legislative initiatives, (Bennett 1997) Anonymizing images (for example by pixilating or blurring people's faces) can be too restrictive and often destroys the meaning and the value of the image. The use of images within a secure site usually depends on trust between the participants. Security is dependent upon the relationship between the participants and a common understanding of the implicit etiquette involved in sharing. That is, that the photos will not be edited or passed on to others outside the group.

Participants in this study gave permission for their images to be published as part of the research

## **Interviews**

Merriam (1998) described the semi-structured interview as one where a set of guiding questions are designed so that the researcher can “respond to the situation at hand” and “new ideas on the topic” (Merriam 1998: 47). Because this study involved a small sample, a participant researcher familiar with the phenomenon and the purpose was to explore the participants' perspectives, semi-structured interviews were chosen for this research.

The semi-structured interview as a tool for understanding the experience of other people and the meaning they make of that experience was chosen in order to allow the participants to “define the world in unique ways” (Merriam 1998: 73). Participants were provided with their web transcripts and image banks before the interview and the starter questions used at the interview were:

*“How did you find the programme? What would you like to comment on?”* The second interview question which was not always necessary was, *“What were the*

*particular things that stood out for you?”* Interview prompts to gain more information were chosen with the intention of being supportive and non leading. For example, *“Can you tell me more about that?”*

### **3.4 Research Design**

The research design in chapter three focuses on an inquiry model based on a constructivist research paradigm. The following ethnographic methods of information gathering were used: Web transcripts, photo journal, participant-observer journal and individual interviews.

The research design uses the following methods of information gathering: peripheral participant observation, interviews, data from web based discussion and documentary photography. In this chapter, I will discuss the participants, and the process for gathering information.

The study involves twelve year thirteen PE students, eleven boys and one girl, their teacher, the online facilitator and the sports mentors. The definition of this group for study occurs naturally. This is the total number of students who chose to study NCEA level three Physical Education. The PE course was an option which ran for the entire year, with four fifty minute periods per week. The male teacher, with ten years teaching experience was Head of Physical Education at the school. The facilitator was a sports lecturer at Auckland University of Technology.

Two groups of mentors were involved. The first group was sport specific, for example rugby specialists who discussed with the rugby group, a golf professional to advise in the golfing area, and a variety of others. These sport specific mentors were all lecturers at AUT. The second group were guest experts who ‘appeared’ for three consecutive days. These online guests were sportspeople who were well known at the top of their sporting field and who had agreed to make a ‘guest appearance’ for a period of three consecutive days.

#### **Validity of Qualitative Research Studies in Ethnography**

Validity in quantitative research can be summarised as “a question of whether the researcher sees what he or she thinks he or she sees” (Kirk & Miller 1986: 21).

However, it is possible to cross check and enhance the validity of a study using triangulation. Two types of data triangulation were used in this study. The first was triangulation which compared data from different sources, including web transcripts, observation notes, image bank and interviews. The second was the collection of data from the different participants.

For the research process using ethnographic methods, Wolcott (1990: 127-8) suggests that these points are necessary in order to guarantee validity:

- The researcher should refrain from talking in the field but rather should listen as much as possible.
- Notes should be produced which are as accurate as possible.
- The researcher should begin to write early and in a manner which allows readers to make their own inferences.
- The report should be as complete and candid as possible.
- The researcher should seek feedback on the findings from colleagues.
- Presentations of findings should be characterised by a balance between the various aspects and by accuracy in writing.

Validity in this research was supported by the fact that all the data was commonly available.

### **Reliability**

“Reliability refers to the extent to which one’s findings can be replicated. In other words, if the study is repeated will it yield the same results?” (Merriam 1988: 170). This project, while similar to other networked learning projects, is a new initiative with regard to sports coaching online and so could not be repeated, as many aspects would be changed. The study could not be replicated in identical circumstances.

However, the reliability of the process was enhanced by its tools of documentation. Web transcripts provided verbatim accounts of the communication activity and a photo journal described the physical activity. When these data collection methods were added to the observations and the interviews, the criterion of reliability could be reformulated in the direction of checking the dependability of the data and procedures.

I have described my position as a participant researcher, instituted triangulation, and have provided examples of methods of data analysis with the intention of providing evidence and results which readers may interpret with relevance to their own situations. The research design, while it could be repeated in another case study, has revealed results which are unique to this situation.

Reliability in this study is dependent upon the results making sense and being agreed upon by all concerned (Burns 1997). Results are supported by triangulation and a discussion of the ways that possible bias has been addressed. An audit trail of participants' stories alongside photographic evidence and excerpts from transcripts are an attempt to make the findings more dependable. The steps taken and the procedures followed are clearly explained.

In order to avoid the natural inclination to place emphasis on observing particularly successful students within the class sessions, a process of selective observation using identity cards was employed (Kemmis & McTaggart 1981). The selective observation process was employed just prior to each session by shuffling the pack and drawing four name cards. In this way, the four chosen students became the subject of close focus on that day. This process of systematic and random elements of observation not only ensured a fair spread but also raised the level of my readiness and sensitivity in observing. While this process ensured that all students were observed equally closely, it did not mean that notes could not be included on other students. Where there was relevant additional data to gather, this was always done. Over the six week e-mentoring period, this method provided a possible 96 close observations of individual students.

### **Triangulation**

Triangulation in this project was achieved in two ways. The data was collected from multiple sources, the four participant groups; the students, the teacher, the facilitator and the mentors. The second form of triangulation was the collection of data from each of the participants in four different situations, my observations and photographs, individual interviews, web based discussion data, and participant analysis of the web transcripts.

## **Generalisation**

Yet another important factor in using a different curriculum area for the study concerns the process of generalisation – that is, the question of whether because e-mentoring was successful with artists, it could also be successful for athletes. Consequently, my aim was to expand and possibly generalise my original finding – that e-mentoring changed learning practices with artists.

## **Analysis of the Information**

Analysis of the data initially focused on photographic journal and the web transcripts. Key words, themes and threads running through the text and exhibited in the photographs were gathered for discussion with the participants. In this way, the data was used as a recording device and was provided so that the participants could decide what were the important aspects for them.

## **Limitations of the Study**

This investigation was subject to certain limitations. In the design and conduct of the study the following limitations are acknowledged:

- Generalisability of the findings can only be from the readers finding some commonality with situations of their own. Participants in this study were all elite athletes and not necessarily representative of learners in a secondary school.
- The teacher participant volunteered to participate in the study.
- The physical setting for the computer pod was not a general classroom.

## **Relevant Ethical Issues**

The following issues were discussed with participants:

- Participants could withdraw from the research at any time and take their data with them.
- Participants were informed that they had access to their data at any time during the project.

- Participants were aware of privacy issues regarding the further use of images posted on the research site.

# Chapter 4

## Findings

*"Learners in supportive environments have high levels of self efficacy and self-motivation and use learning as a primary transformative force"*

(Bereiter & Scardamalia)

### 4.0 Introduction

In this chapter, a picture of the way the technology and the mentor network is employed is found in (4.1). Participants' perceptions and satisfaction with the mentor network can be found in (4.2). The data from this investigation is directed towards answering research Question 1:

- What value do students find in personalised online learning with experts beyond the school?

Section (4.3) then takes a view across the previous section and analyses the relationship between the participants' perceptions of the mentor network and *The New Zealand Curriculum's* (2008) Key Competencies: (or *Capabilities for Living and Lifelong Learning*). This section addresses research Question 2:

- How can personalised online learning with experts beyond the school contribute to students becoming informed, active participants in their own learning?

The chapter concludes with section (4.4), an assessment of the possible benefits of online mentoring partnerships for New Zealand secondary education. This section relates to research Question 3:

- What contribution can personalised online learning with experts beyond the school make to 21<sup>st</sup> century teaching and learning in New Zealand?

## 4.1 SportLink and the Learning Network

### The Teacher's Request

The teacher involved in this study was Head of Physical Education. He was interested in providing his students with a hands-on, stimulating online learning experience with an emphasis on dialogue with expert sportspeople. A teacher with fifteen years of experience, he had previously observed in the Art department and seen art students working online with artist mentors (Stevenson 2002). He was very interested in the results they were achieving and was aware that the learning behaviour of the mentored art students had changed. The aspects he noted were their increased personal focus/motivation, their independence and their sense of well-being/hauora:

*They're very 'centred,' aren't they? We could do with a bit of that in the PE department! (PE Teacher)*

He felt that his year thirteen Physical Education students would benefit considerably from working in the same way because much of the mentoring process we were using mirrored principles of sports coaching:

*You're really going for personal best aren't you? I can tell that the students really respond to this angle – you're actually coaching them. (PE Teacher)*

He was keen for the process to be fun and an enjoyable experience, mindful of the fact that this aspect would facilitate learning and help build student motivation. At the onset of the programme, the teacher, who did use email and owned a cell phone was a novice user of ICTs in the classroom.

### The Website

In response, SportLink, an online coaching room, emerged as a purpose built website. It was constructed by Peter Mellow from the Department of Sport and Recreation at Auckland University of Technology. Peter also took the role of facilitator for the SportLink project. AUT's Blackboard™ LMS was chosen as the

platform for the project because of its facility to support discussion. It was also well able to support images as well as text. It fulfilled the project's needs by being user friendly and, importantly, was flexible enough to be able to be customised to a theme and to contain a range of documents and resources.

### **The Facilitator**

Peter Mellow was a member of staff at AUT's Department of Sport and Recreation, where he had taught for seventeen years. While having considerable experience in facilitating online groups (both as an online teacher at AUT and as a Flexible Learning Leader in New Zealand [FLLINZ] leader), he also had a very strong background in Sports Science, in particular, anatomy and anthropometry.

This facilitator felt that one of the most important aspects of the start of the project was to make clear to participants the aims of the project and the 'rules of the game' in order to minimise the possibility of the learning intentions becoming clouded in the online format. Consequently, when participants entered the SportLink site, they were invited to look through 'Information' first and it was here that the goals of the project were set out:

#### **Course Goals**

This programme has three study goals:

- The study of Biometrics
- An understanding of Motor Skill Learning
- The development of a personal exercise programme

Sport mentoring and discussion groups will be the main foci during the course of this 8 week project.

The facilitator's technique for introducing the project was to engage everyone in a 'getting to know you' discussion, "What is Sports Science?" This played a dual role of getting the project under way while familiarising the students with the process and the new online classroom. For this first activity, students were taking part in a discussion within a 'known' group of people – that is, their classmates, the teacher and the facilitator. This was to ensure that the site, the systems and the technology were familiar to everyone and to ensure that when the students took

part in discussions with guest experts, they would be able to take full advantage of the opportunity without needing to pay attention to the tools. With the plan to have some experts fitting in a three day conversation between major sporting commitments, optimum student engagement was desirable.

### **The Physical Working Area for Students at School**

The PE department did not have any computers so it was necessary to set up a group of wireless laptops for the students to use in a meeting room attached to the administration block. This was not ideal as it prevented real integration of the everyday work of the PE department with the online tool. However, students adapted well to the geographical distance between the meeting room, their usual classroom, the gymnasium and the sports field. Unless they had a planned commitment on the sports field, it was common for them to arrive at the meeting room less than a minute after the bell for the change of periods. In week three, Tony commented as four of the students attempted to enter the room through a single doorway together:

*Interesting that we get here right after the bell when it's actually further away than (PE classroom) G4! (general laughter)*

Later that week there was some good-humoured joking with a student who arrived back for an online discussion having been to weight training:

*(much laughter) Hey (Student), I didn't think you could get to the weights room and back in under a period. (Hamish)*

For the duration of the eight week programme, at no time was a student late for class.

The meeting room had originally been constructed for staff but with roll growth overtaking available classroom space it was occasionally used for small classes. The room was pleasant, light and well ventilated by windows on two walls. It was carpeted and the furniture was attractive and fairly new. The technology was provided by twelve portable wireless laptops which were stored in a purpose built cabinet with shelves. The time taken to set them up was just a few minutes and the students generally set up the equipment themselves, choosing a laptop and logging

in as they entered the room. The tables in the room were of the kind which could be fitted together to form a circle and on the first day, they were arranged (intentionally) in an approximate circle with several gaps between tables. The students chose where they sat. Sometimes, on subsequent days when the students entered the room, others had left the tables arranged in more formal rows. The students consistently rearranged the tables to form an inclusive group for the duration of the project.

Having the flexibility of portable wireless laptops portable wireless laptops, students had the freedom to rearrange themselves to suit their current work with others. The teacher took his place as part of the group and joined in the face to face and online discussions. He asked questions, made helpful comments and assisted others who were trying to formulate specific contributions. At no stage in the project did he take an authoritarian role – his role was one of participation, support and guidance. Having adopted this role, he was able to take a full part in the discussion with expert mentors and thus become a learner himself.

During the 50 minute period students would quite often reposition their working space. For example, when a student received a particularly interesting reply to a question posed online, leading to researching a range of web links, other interested students would physically move to join in. It would have been possible for the students to access the same comment online and maintain their own individual search but the option of joining the group in the room was usually taken up. This resulted in a very rich learning environment as it produced animated discussion within the room with simultaneous input from the online resource.

### **The Virtual Working Area for Students**

The SportLink site was easy to navigate having clearly defined areas which were accessed via the menu. These areas were:

- Announcements
- Information
- Documents
- Staff Information

- Communication
- Discussion Board
- External Links
- Tools.

The *Announcements* page alerted participants to the dates for three day guest expert discussions and was used for any other general messages. In the screen shot below, the facilitator has included an action shot image of Hayden Shaw, the second guest expert and invited students to post their questions.



**Figure 4.1 SportLink *Announcements* page.**

The *Information* section of the site contained instructions related to Blackboard™, in particular, specific user needs such as the necessity to install *Java* in order to use the synchronous chat facility. The *Documents* facility did not, in the end, need to be used during the project as all participants had web access to any internet reference material more quickly as one click from a hyperlink rather than taking a separate search into a document folder. The *Staff Information* link led to a short profile and image of the staff and mentors involved in the project, with *Communication* taking the user to the synchronous chat facility.

The *Discussion Board* area was the most used function of the SportLink site recording 73.96% of participants' access during the project. The next most accessed area was *Announcements* recording 9.94% of user hits. Complete usage data is available in *Organisational Statistics* in the Appendix.

The *Links* section provided participants with several other 'learning rooms'. The rooms and the explanatory comments found on the Links page are reproduced below:

Sport and Exercise Science New Zealand

SESNZ is the professional body for Sport Scientists within NZ. Look under the publications link at 'Guidelines for Athlete Assessment.' Many of the links on this page are PDF files that you can download, read and/or print out.

Peter Snell Institute of Sport

The Peter Snell Institute is an organisation focused on finding athletic talent in NZ youth and nurturing these athletes in their sport.

New Zealand Academy of Sport

The New Zealand Academy of Sport was established with the aim of providing a comprehensive support system to assist national sport organisations achieve international sporting excellence.

SPARC

Sport and Recreation New Zealand.. Can you find your sport in the 'National Sports' section? Do they have a web site of their own?

All Blacks Web site

The official All Blacks web site contains all the latest news within the All Black organisation.

NZ Fitness Home Page

Have a look at the 'Fitness Articles' page, especially the 42 articles written by my students for one of their assessments.

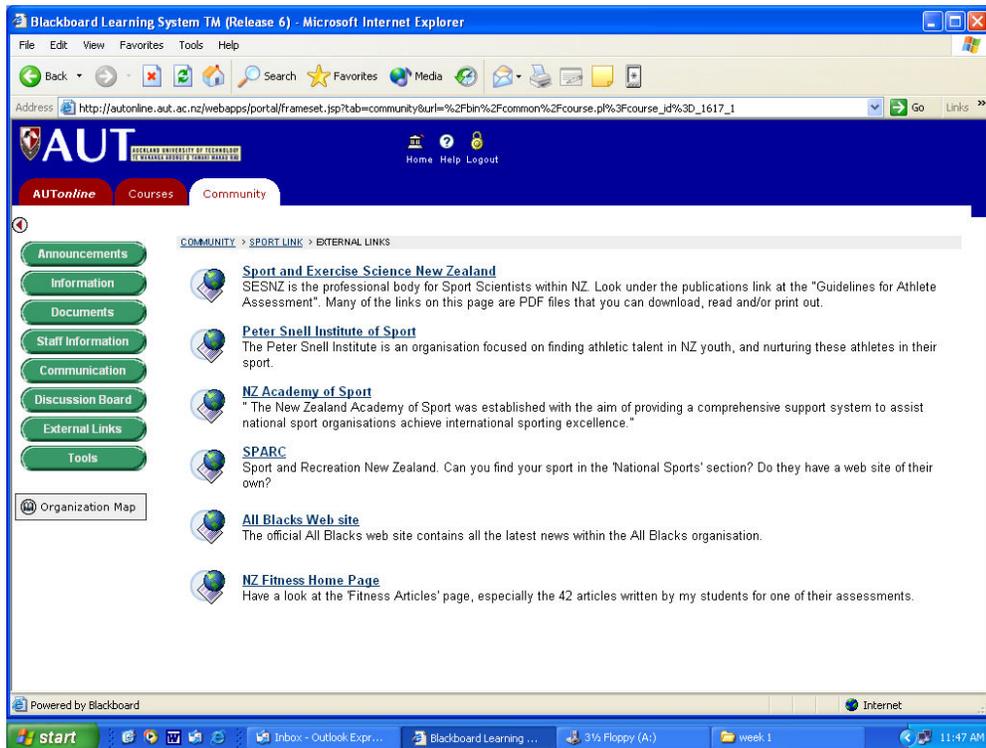


Figure 4.2 SportLink *Links* page.

## The Sessions

The students were given a hard copy timetable of events so that they could see how the programme fitted in with their achievement standards and be aware of the dates for guest conversations. It was important to provide clear details of the programme ‘in the hand’ so that schedules were clear without having to log in to find out.

**Table 4.1 SportLink: Overview of events.**

<b>Week/Date</b>	<b>Online mentors at AUT</b>	<b>Three-day guest online conversation</b>
1. 24-28 May	AUT mentors in golf, rowing, rugby, rock climbing, snowboarding, hockey	Peter Mellow      Sports Scientist
2. 31-04 June	AUT mentors in all codes above	Clara Soper      Biomechanist
3. 07-11 June	AUT mentors in all codes above	
4. 14-18 June	AUT mentors in all codes above	Hayden Shaw      Hockey Olympian
5. 21-25 June	AUT mentors in all codes above	
6. 28-02 July	AUT mentors in all codes above	Jamie Fitzgerald      Trans Atlantic rower
7. 05-09 July	School holidays	School holidays
8. 12-16 July	School holidays	School holidays
9. 19-23 July	AUT mentors in all codes above	
10. 26-30 July	AUT mentors in all codes above	Michael Jones      Former All Black

The duration of sessions was one school timetabled period which was fifty minutes, with the students having four periods of PE a week. The project ran for eight weeks and half of these available periods were scheduled for online work. This resulted in students having a potential school time contact with the programme of sixteen hours. In reality however, the programme was available to them via any computer connected to the internet, for twenty four hours, seven days a week. All ten of the students who had internet access at home took advantage of being able to access the programme out of school hours. The two students who did not have access at home did not find this a disadvantage. One of them accepted an invitation to spend time on the programme at another student's house and the other spent some extra time accessing the programme from the school library:

*Yeah, I just check in on the library computers – it's real easy to get a computer during study.* (Ross)

## **Asynchronous Discussion**

With access to the SportLink at any time of the day or night, there was opportunity for students to learn at their own pace and also for mentors and the teacher to contribute or review progress at times that were convenient. Accessing the site from their home computers, students logged late night times on the discussion board:

11.02 pm Fri June 18: *"Thanks [mentor], the web pages (links) are going to be very useful."*

10.27 pm Wed June 23: *"What do you consider is the best type of training to be doing off the wall to help me climb?"*

09.16 pm Wed June 30: *"I'm doing a biomechanical analysis on the gate start for snowboarding. Have you any idea of how to use levers to use maximum speed out of the gate?"*

Contribution times logged by the mentors were also sometimes well into the night:

01.14 am Sat 18 June: *"Can you tell us what you are already doing? Weights? Plyometrics? Cheers!"*

11.47 pm Mon 20 June: *"Hi [student] hopefully [expert mentor] will be here next week and I'll ask him to pop in and answer this question as well as take part in the general discussion."*

## **Synchronous Chat**

Students had immediately seen the advantages in using the asynchronous mode for discussion. The aspect of having the opportunity to reflect and think about a reply was noted by nine students.

*Working asynchronously made me really think about constructing a good question – I actually started to think differently as I tried to get to the specific point. (Tony)*

They were comfortable with the spaced timing of response and reply, saying that it offered “*thinking time*” and that it was good “*not being pressured.*” However, in week two when synchronous chat was introduced, only two of the students were comfortable with this. See Appendix A. During the first chat session, all of the students had an opportunity to be involved but nine chose to follow the conversation online without contributing. One student was absent. The two participating students were members of the group who were confident communicators with fast keyboard skills. These students were familiar with using chat tools such as MSN messenger. Four other students in the group were also familiar with MSN messenger but found the idea of having “an important” conversation in a chat room daunting:

*Chat is fine between bro's but not so good for this – our chat is different, it's different language - it's about day to day stuff. (Barry)*

Another student thought that “chat language” was too limiting for what they were trying to do:

*It's ok for casual but not for important stuff. (Ross)*

Following the first chat session, even the most ‘chatty’ students with the fastest keyboard skills agreed:

*I did really enjoy the synchronous chat though – it was more of a conversation...but it was more of a fun thing though rather than a learning thing I think. (Tony)*

The students were able to choose whether or not to continue with synchronous chat. The facilitator had offered them the possibility of taking part in synchronous chat sessions with the three day guest experts. There was some difficulty in making the decision as all of the students found the idea of chat appealing but were less enthusiastic about actually taking part. They were having difficulty in finding reasons for their reluctance. However, after one student talked about time to think and strongly supported asynchronous discussion, his argument was quickly taken up by the others:

*What made a big difference to me was having time to think before making a posting.  
(Hamish)*

With very little further discussion the group unanimously agreed that they would use only asynchronous discussion. They concluded that even though they enjoyed using public chat forums socially, asynchronous discussion had a clear advantage for their learning.

### **The Teacher's Role**

In the preceding years, the teacher had taught this achievement standard to the class by choosing the sporting code himself. All of the students studied the same sporting code. This course of action enabled the teacher to thoroughly research and plan the material which the class would learn. During the preliminary discussion for the SportLink project, we looked at the fact that the art students (Stevenson 2002) had reported that a determining factor in their satisfaction with the art mentoring projects had been the fact that they had been able to choose their own research directions. While all art students had completed the same achievement standard, they had been able to personalise the content to align with their own interests and individual expertise. After reflecting on this model, the teacher decided that for the SportLink project, the PE students could choose and study the sporting code in which they participated.

The teacher's role was to provide the support and advice concerning the requirements for the NCEA achievement standard. He played an important role in aligning the work to the time schedule and in supporting students to follow up their personal directions of interest. Always seated within the group and taking part in the online activities, there were frequent occasions where he was involved in helping students with their writing skills, in particular, helping with the formulation of written questions which succinctly requested the information the student was seeking from an expert. Usually quite a directive teacher, within the project, he did not deviate from his role as supporter and guide. He asked powerful, inquiring questions, was always ready to support and appeared to be delighted with his students' independence and expertise. During week two, the teacher commented on his own change of role, *"I used to be a bit of a control freak but now I can see all this learning going on around me!"* The following

week while taking part in a discussion, he remarked, *“They’re learning things they don’t even know they’re learning,”* and towards the end of the programme, *“This is the best PD I’ve ever had.”*

### **The Mentors**

The facilitator in this project also played a role as a mentor. There were three other AUT mentors from the Department of Sport and Recreation who offered advice and support to the twelve students. This process meant that any of the four mentors were able to take part in a discussion with any of the students. In addition to these four general mentors were three additional experts who offered highly specialised advice. These included a golf professional, a rowing coach from the New Zealand Academy of Sport, and a Dietician/Nutritionist. Lastly there were sporting experts who took part in the three day expert conversations. Four conversations were scheduled for the eight weeks with the first being led by one of the AUT mentors. The last three guest expert conversations were led by New Zealand sportspeople performing at an international standard.

Figure 4.3 details the SportLink communication network, explaining the direction of the communication processes:



**Figure 4.3 Network of SportLink participants and the communication structure**

### **Advice from the Experts**

With the start of the expert mentoring programme, the provision of timely and open ended advice was paramount. Frequent communication was necessary in order to build strong expectations and interest for participants which would last the distance for the eight week project. The facilitator ensured that not only did the students receive advice as text replies, but also that the online contact was as rich as possible by containing hyperlinks which led to new avenues for student research. For example, a snowboarding student asked for advice about his weight room training and received this reply from the facilitator:

*Hi Paul, well I'm not an expert on weights for snowboarding but here is an article I wrote about ski fitness which might help: <http://somatype.net/nzfitness/pages/ski.html>*

*It is quite old but I did a good movement analysis before I wrote it so I think it is sound.*

*I found this page for you, and there are some more links at the bottom of it.*  
[http://snowboarding.about.com/cs/fitness/tp/exercises\\_home.htm](http://snowboarding.about.com/cs/fitness/tp/exercises_home.htm)

*Cheers! ☺*

In cases such as this, the facilitator also played the role of an expert mentor, maintaining the students' interest and involvement while waiting for a reply from a particular expert. This ability to maintain the momentum of the conversations was a crucial factor in keeping the project energised.

For example, Mary had begun her discussion at 10.30 am Friday morning with some details about her current training for aerobic fitness and strength and 'hitting the wall' at the 1000m stage of a 2000m rowing race. After providing details, she asked, "Do you think that this type of training is going to help with my rowing and obtaining strength throughout my 2km races? What other exercises could I do that are specific to rowing that will help?"

At 11.10 pm that Friday evening, the facilitator replied:

*It sounds like you're doing a good variety of land based training...I've asked (biomechanist) to see if one of their rowing coaches can pop in here and give their view on your training.*

*What does your coach say? Also – have a look at this Danish training method. Look any good to you? <http://www.concept2.co.uk/guide/guide.php?article=personalising>*

This well timed feedback from the facilitator maintained momentum in the conversation. Without having face to face contact with their mentors, students were eagerly watching the message board. The frequent and friendly communication from the facilitator also set the tone for the community, keeping participants involved and alert for the moment when the crucial expert advice they were looking for was posted.

Immediately after the weekend, on the Monday morning the facilitator posted again:

*I think you will get some very good answers from [coach] – he is a great sports scientist and has worked with many NZ class rowers. I'll feedback to you about your diet after talking with our nutrition person.*

Tuesday brought the reply from the rowing expert. It was extensive specialist advice, very detailed, and of immense value to the student. The student replied within the hour:

*Hello [coach] thank you very very much for your great feedback on my rowing programme. Your experienced knowledge is very helpful for me so I can reflect on what I'm doing and what I can do to improve. Thanks again and I hope you have a great day. (Mary)*

Experts 'on the fringe' of the project, (such as this rowing expert), sometimes replied in an email to the facilitator, who would then post the comment inside the SportLink community. In this way, the network of advisors was expandable and driven by the enthusiasm and goodwill of the facilitator.

The style of the mentors' contributions varied from formal to very informal. Some provided comprehensive training advice and others mixed their advice with strong personal support. However, they all consistently used language which demonstrated goodwill or showed strong support for the students' progress. Phrases such as 'Good Luck', 'Cheers', 'Let me know how you're doing', were common. A conversational style which delivered expert advice was common amongst the mentors. In reply to a question from Barry:

*Hello Clara it's Barry here. I was wondering if im using my levers effectively to get the maximum force and power into my pass going on the pics below. The pass is 10m to the left and 5m back. Thanks. [multi frame coaching image accompanied this question]*

The biomechanist mentor replied:

*Nice pics! An important part of your throwing technique is getting the timing right between your arm movements and your leg movements...passing a ball as you are is not just about arm strength. To me it looks as though your sequencing is a little out...in Pic 1. the ball is towards the right leg and your body is towards your left leg which is already very flexed...this means that to throw the ball to the left you can*

*only move your arms (as your body is already there). I hope this makes some sense!...You need to use your body and legs more in the initial movements. Your arm muscles are comparatively small and weak compared to your legs and trunk muscles so you must use them as much as possible and rely on the arm to actually throw the ball (not to generate ALL the force behind the ball) Hope this helps – get back to me if not! Clara*

The students, who all naturally wrote quite informally and conversationally, intuitively matched their style to that of the mentors, becoming more formal in reply to a formal comment. For example, Jeremy posted this comment to Hayden Shaw in a discussion:

*Cheers man n gud luck with the Olympics.*

But later, in a more formal situation discussing technique using a multi frame image, his communication style with the same mentor was quite different.

*I think that I am pushing the ball too far past my front foot. What do you think? What do you think about the other aspects of my shot? If you have any other tips on what I can do to improve my technique that would be helpful. Thank you.*

Some of the students were particularly perceptive about the nature of online communication and were interested in talking about it in the final interviews.

*Online, it's only polite to say the things you would normally say if you were talking to someone. If you don't do that, it's a bit curt – it's factual and it puts your back up a bit – 'cos its not very human – it's just like a computer talking to you. It's like if you say goodbye to someone you might give them a hug or shake their hand – it's the same online, you say 'thank you', 'nice to hear from you', those little niceties that you include in normal interaction. (Tony)*

Seven students commented on the fact that communication online came naturally to them:

*It was easy for us to work – everybody was relatively computer literate. It was user-friendly because everyone's used to using hotmail and stuff. (Tony)*

Finally, the permanent nature of online expert conversations with research web links and the contribution they could make to learning was noted by Mary:

*It would take years to research the subject by yourself. And it's not like when you research facts online – it's having a conversation with someone who points you in lots of right directions.*

Not all of the discussions with mentors related to the subject matter curriculum aim. One mentor gave strong emotional support to an injured student:

*(student's name) thanks for your email.*

*Sorry to hear that you have suffered an injury. All the best with the re-hab. From my own experience, whilst always frustrating, disappointing and at times you just want to give up, injuries have served to grow my character. It is about how one responds to these trying times in an athlete's life. Most importantly, you need to develop an attitude (I'm sure you already have it!) that you will do whatever it takes to get back to your best. There are no short cuts but will require courage and sacrifice (pay the price). If you can, a personal trainer whom you trust and is an expert in rehab and building fitness and strength is highly advisable. This may cost but will fast track your recovery.*

*You must be patient because at times you will make some good progress and other times, you will feel as if things are going too slow for your liking! Hang in there, those are the test of your character, which are the most trying. Don't give up. I'm sure you will recover well. God Bless, Michael*

*(Michael Jones)*

For the student who received this advice, the written comments as a web transcript became more valuable than words spoken face to face and poorly remembered. They were a tangible reminder of some very important and personal advice:

*I have every word saved. (Student)*

Students also mentioned that the process of working online helped them to clarify and organise their thinking. They talked about the process of “asking a good question”, “getting to the point”, and “being clear about exactly what information was needed”. Eight of the students mentioned the value of “having time to think” before making an online posting. E-learning terminology was used

conversationally right from the beginning of the project which meant that students used it naturally:

*Working asynchronously made me really think about constructing a good question...*  
(Tony)

This student acknowledged that the time he was taking to reflect before ‘speaking’ was resulting in a more sophisticated level of thinking and sharing:

*I can get a lot more out of it by thinking about it first. I need to think about what I want to say. Sometimes while I’m thinking about what I need to know, it’s like asking myself questions and then I realise that I know the answers to some of the those things... so in the end the question I write in the discussion is a more important one.*  
(David)

Both students and their teacher noticed that the ‘thinking through’ process prior to discussion online was resulting in a move towards students managing their own learning:

*You know sometimes the time we spend formulating what it is that the student needs next almost gets us to the answer. It’s like step by step - I’m asking them the leading questions so that they can figure out what it is that they need. We don’t usually do it that way in school.* (Teacher)

### **Changing Roles for Students**

From session one, it became apparent that a student who was technically skilled would be of considerable help to others. His offers of help ranged from minor assistance with logging in to invitations to his house to follow up on conversations. This resulted in a role reversal of his place in the general classroom where he was not seen as a leader or strong academic. Students were grateful to have his help and when they spoke to him, their language had a new tone of respect:

*Hey Jack, what’s the login...Nah, I can’t get in – it’s real slow. What did you do with the wireless the other day? ...How do you know that? ... I didn’t know you were a geek. [with obvious respect]* (Ross)

Jack would also take the initiative in offering help and advice:

*Mark, if you hold down shift when you do that, your pic won't go out of proportion – then just highlight it and cut and paste from your doc – saves heaps of time. (Jack)*

The teacher also benefited from Jack's help:

*Sir, are you ok with that? Here's the start of this discussion – over here where you can see Jeremy's name...and then you can follow it here...it's a bit hard to follow but you soon get used to it after a while. (Jack)*

I mentioned to the teacher that I had noticed that another two students had seemed quiet and unresponsive in the classroom but that they were demonstrating a new independence and confidence in their work in the online environment:

*[Student] and [Student] are contributing much more now that they are working online. Also, their success in the online discussions seems to have 'flicked a switch' for them and they have started saying more in the face to face group.*

*(Researcher journal 16 June 04)*

I asked the teacher if they often shared their ideas with him in the classroom. He agreed that they did not generally contribute in class but that they were more forthcoming in a one to one situation: “No, they don't,” he said, “You've got to drag it out of them – but at the times that I've had a personal conversation with them, they know what they've been talking about.” The teacher recalled a situation with one of these students the previous week:

*When Jeremy was working on his information for his digital pics and I asked him about his analysis - you know he doesn't talk a lot anyway - so I had to sort of drag it out of him and you ask him a question and he sort of goes – “Uh” –and then you sort of partially answer it for him and then he might add a little bit to it and go “Yeah, yeah – I agree with you” – I agree with the answer you've just given to your own question [laugh] (PE teacher)*

However this student engaged well online, posting this well thought out comment:

*In my training programme, I have allocated the first 10 weeks for a general weights programme designed to increase overall strength by doing bench press, lateral pull down, leg press, hamstring and clean and jerk to increase explosive power. Do you think these exercises are appropriate and are there more specific exercises you would recommend? (Jeremy)*

There was a significant difference between Jeremy's conversation style with the teacher and the more sophisticated way he conversed online with the mentors. There was a change in his attitude too. When talking with the teacher, he was often visibly unsure of himself but when taking part in the online discussion, he consistently appeared confident and engaged.

With regard to the other student who was showing greater self confidence, the teacher showed surprise at the quality of the student's contribution:

*I'm a medium fast bowler and used as a pinch hitter for batting otherwise I bat at number 6. I want to improve my arm speed and my bowling action. When you said '...a little elbow bend doesn't go astray either' is this something you recommend? (Tom)*

The thoughtful way the student conversed with the mentors was quite different from the teacher's experience of his low key communication style in class. The quality of Tom's online interaction led to the teacher reflecting on his opinion of this student's ability, "He's written some quite good things when he's been talking in the discussion." [Surprised look] "They're quite short but quite solid – quite good." During the time of the project, the teacher revised his opinion of the ability of both of these students. The online format had provided them with a forum in which they could demonstrate their potential.

### **Lots of Visitors and Changing Teacher Roles**

Teachers from other curriculum areas were frequent visitors to the group at work and the students were very happy to share their programme. My researcher journal entry details the changed roles of the teachers present:

*There was a lot of quite animated discussion going on in the room today – at one stage a group of the students were discussing the use of steroids with Brad (teacher) and Nicola who teaches Health. As I watched this take place – I was aware of the*

*fact that this type of cross curricular discussion between students and teachers was unusual. Often there doesn't seem to be time or opportunity for this as everybody is so busy working in their own knowledge areas. Today I particularly noticed the very relaxed body language of the teachers. They were all smiling and looking pleased, excited, and enthusiastic. In most cases, the usual roles were reversed – the students were doing the explaining and the teachers were listening. This morning a huge amount was accomplished in a relaxed, conversational atmosphere - the whole session was energising for everyone. (Researcher journal 30 June 04)*

## **Things Did Go Wrong**

However, there were obstacles to overcome, with many of the difficulties being related to the technology. The set up for the project was precarious, with ten mobile battery run laptops and a wireless connection. This equipment was all that was available when setting up the project and it was decided that the exercise had looked possible (though fraught with pitfalls). In order to minimise the risk of technical failure, I had made it part of my responsibility to maintain the laptops, checking that they were charged and that they had been brought to the meeting room in time for class. However, my journal entry of Tuesday 22<sup>nd</sup> June, 2004 detailed a major problem in week five:

*Brad (the teacher) used the laptops by himself yesterday afternoon and found the whole thing a waste of time – for some reason, nothing worked. Today he told me that he didn't want to “waste any more time playing around with technology that didn't work!” He felt that the schedule for getting through the achievement standards was tight for the year and there was “no way he could afford to have unproductive periods.”*

To try to improve the situation, I offered to help with the next set of multi frame images for coaching. The students had been unable to load them onto the site during the previous day's unproductive session. They were now all unnamed in one of the teacher's folders on the school intranet. They needed sorting, naming and resizing for the web. After eventually posting them on the site under the students' names, I emailed the facilitator at AUT explaining the delay. The almost immediate response was:

*The photos are coming through now ok. Well done! I'll print some out now for speed and ask the team to look at them right away. Hope this helps. Kevin is really keen to answer the halfback pass question. (Facilitator)*

The facilitator was well aware of the frustrations the teacher was experiencing with the precarious technology. The difficulty experienced the previous day had been caused by other users not charging the laptops after use. One of the major difficulties for the teacher as a new user of ICT was determining what the actual problems were which needed fixing. Additionally, it was difficult for a teacher who was used to being totally in charge of his subject to be dependant upon so many unknown variables.

The next day, hoping that nothing else major would happen that week, I checked everything, room bookings, laptop bookings and guest expert dates. I wrote in my journal:

*I arrived early to set up the laptops about 45mins before the session today in case there were any problems. Lucky I did. The last person to use them had again put them back without attaching the recharge cord and plugging them in. However there was just enough time to charge them for the guest expert discussion with Hayden Shaw. This sharing business is a bit of a nightmare! (Researcher journal 23 June 04)*

However, it was a great morning. Here's my email to the AUT facilitator after the session.

*It must be hard to see from your end but this morning was an outstanding success. Thanks for your team's speedy replies and your extra input! I wish you could have seen the amount of amazing learning going on in the group. The students were discussing questions for Hayden, analysing each other's coaching photos, sending extra question to the mentors, researching sites you gave them and explaining the whole online mentoring concept to a visitor in the room. They really like using the multi frame images and [the teacher] was very excited about the mentors giving such specific feedback on them - he said "This is exactly what we need!!!" (email in researcher journal 23 June 04)*

There were several of these difficult occasions during the project resulting in the group coming to an understanding that the process which offered such rewards could also serve up disappointments. In cases of communications 'outages', the

value of using a wide range of digital resources became apparent. The internet was not required for viewing the exercise programme on CD, movies on DVD or analysing print outs of the multi frame coaching images. There was also always work for the students to do on the development of their exercise programmes.

However the example of needing to share equipment was not the only difficulty experienced by the group. There were several other hurdles to overcome. School server reliability was second in line in terms of barriers to smooth communication services. The group experienced five interruptions to their work due to server crashes over the eight weeks.

Other barriers to productive online learning were noted by four students in their final interviews. These barriers were:

- The need to relocate to use computers outside the PE working area (4)
- Waiting for answers from the mentors (4)
- Students finding the technology frustrating because they had better equipment at home (2).

The two students who did not have internet access at their homes did not find this aspect a problem. They both had found their time online during the school sessions was adequate for their needs and one had accessed the SportLink site twice using the computers in the school library.

## **4.2 Participants' Perceptions and Satisfaction.**

This section deals with research Question 2. What value do students find in personalised online discussion with mentors? At the interview at the conclusion of the programme, participants were provided with hard copies of the image data and their own web transcripts. Four students already had their own digital copies of all of their online work.

The data which is reported here is drawn from the participants' responses to the open ended interview starter which was offered in a conversational manner. "*How*

*did you find the programme? What would you like to comment on?"* The second interview question which was not always necessary was, *"What were the particular things that stood out for you?"* Interview prompts to gain more information were chosen with the intention of being supportive and non leading. For example, *"Can you tell me more about that?"*

Students had a considerable degree of agreement when talking about the aspects they valued from the programme. In nearly every case, the content of their answers was contextualised in terms of personal needs. Consequently, their statements have been analysed using Maslow's hierarchy of human needs. Where students have concurred in their opinion, the number of students agreeing has been indicated by the number in brackets. The criteria for agreement was that the comment must concur with the level of 'needs met' indicated in column A, *Human Needs*. For example, Paul (Table 4.2) talked about experiencing a greater and more satisfying involvement with the online programme than his day to day schooling experiences of working on his own sporting code. Jack said "It's easier this way, sometimes it's hard to listen at school! I've got all this set up myself on my computer and I'm working on my training programme myself." Consequently, Jack's comment is counted as one of the three at the top of column C.

**Table 4.2 Students’ reasons for ‘buy in’ to the online expert network analysed against Maslow’s Hierarchy of Needs**

MASLOW’S HIERARCHY OF NEEDS	<b>A: HUMAN NEEDS</b>	<b>B: LEARNER ENGAGEMENT</b>	<b>C: RELEVANCE TO LEARNING</b>
	<b>Self Actualisation</b> Developing skills to fulfil one’s potential Self sufficiency Creativity	“I want to take every opportunity. When I went to OPC, (Outdoor Pursuits Centre), I didn’t want to miss out on the discussion so I borrowed Mr W’s laptop and connected to the internet in the cabin.” [Mary] [4]	“I haven’t done real well at school but even on the first night I accessed the web pages from home – there was heaps of stuff there for me. There’s no way I could have studied snow boarding in the classroom.” [Paul] [3]
	<b>Self Esteem</b> Self respect Mastery Independence Responsibility Achievement	“Being able to choose our own sporting codes was the key. Mr W. took on more of a student role...he was learning in with us as well which was kind of good to see – it meant that <u>w</u> e were responsible.” [Tom] [7]	“NCEA is about this kind of thing - thinking about the good and bad ideas – to get excellence you have to do the pros and cons so the more information you can expose yourself to – the better choices you can make.” [Tony] [4]
	<b>Social belonging</b> Belonging to a group Cooperation	“It was a wonderful experience to work with great athletes and sports scientists and to be able to talk about and access their huge supplies of knowledge. I hope this is something I can keep using later.” [Mark] [8]	“At one stage we had this whole range of people in the room - we had a guest expert, a biomechanist and a fitness advisor there – it meant you really wanted to be there.” [Hamish] [9]
	<b>Physical safety and security</b> Fairness Justice Freedom from fear  <b>Physiological Needs</b> Food, shelter, health	“...everyone is sort of equal by being online. If we went to see a lecturer at the Uni, we might be kind of afraid...but when you’re online, you just type away...and at the same time, we’d be talking to other people in the class who were doing rugby and we’d amalgamate our ideas as well.” [Tony] [3]	“..learning like this is comfortable” [Mike] [8] “very relaxed learning” [Jeremy] “This is better than school” [Paul] [8]

Footnote 1

The data in column A is a condensed summary of Maslow’s Hierarchy of Human Needs

The data in column B is taken from student interviews and relates to engagement

The data in column C is taken form student interviews and relates to aspects of student learning

## **The Image Bank for Student Reflection**

Each student was able to view images (taken at ten minute intervals) which recorded their work sessions. A photo record was taken at four points of the fifty minute session. These were timed as:

- Segment 1, 0 -10 minutes
- Segment 2, 10 -20 minutes
- Segment 3, 20 - 30 minutes
- Segment 4. 30 - 40 minutes.

There were additional images inserted to record particular changes or activities which occurred. This visual prompt, viewed alongside the web transcripts helped students to accurately focus on and recall their learning experiences.

The image data was supplemented by transcripts of the student's coaching advice, the three day expert conversations and an example of synchronous chat. Figures 4.4, 4.5, and 4.6 are examples of image data sheets. They have been selected as examples of data collected at different times in the programme.

By the beginning of week two, students appeared to be unaware of the use of the camera in the room. Recording images as data sheets showing six images in one view proved to be a valuable way to get a 'snapshot' view of exactly what was going on in the group at any time. The nature of the activity was immediately obvious by scanning the page. In Figure 4.4, images from three separate data sheets have been presented on one sheet to give an overview of what was happening and when during that period. There is evidence of students setting up their own laptops on entering the room and then evidence of the same students getting down to work. Image 2, segment 2 demonstrates that during the second ten minutes of the period, these students had quickly set up, logged in and were totally engaged in their work. The level of engagement of the group in this session is confirmed by images 3 & 4 from segment 2. Later in the period, (segment 3) in image 5, a student has taken his new information from the 'What is Sports Science' conversation and is revising his training programme in the weights room.

In image 6, the teacher is taking a set multi frame images of a student's golf swing for inclusion in the next day's discussion.

Image Data: #2, 28 May 2004

Week One: Discussion 1. Peter Mellow AUT

'What is Sports Science?' Session 4



28/5: image 1 segment 1.



28/5: image 2 segment 2.



28/5: image 3 segment 2.



28/5: image 4 segment 2.



28/5: image 5 segment 3.



28/5: image 6 segment 3.

Figure 4.4 Image data sheet: 28 May, from segments 1-3

In Table 4.5 it is possible to see that by week four the environment had become more active. Large photo boards (see image 1, segment 2) helped to bring members of the online community into the room. The photo boards also included the student images which had been placed online for the mentors to view. This visual collection served to constantly reinforce the culture of a community of learners.

In image 1, segment 2, Barry is conversing with Hamish about their exercise programmes. In image 2, segment 3, Hamish is in the weights room putting his advice into practice.

As students worked online, there was also considerable face to face discussion occurring (see image 1, segment 2). Students would engage in discussion with each other before replying to a comment online. In this way, a fully blended programme occurred where students were working collaboratively online and simultaneously collaborating in the classroom face to face. At this stage an entry in my researcher journal reads:

*This is so natural – it's just like at home - a family chatting online to a family member overseas. Everyone is putting their ideas into the conversation with one person typing the message. Having the pictures of everyone in the room makes the others feel present – it's like chatting on MSN and seeing people's pictures pop up on the screen. ((Researcher journal 18 June 04)*

At times, groups of students, and the teacher, would group themselves around something of common interest and spend up to ten minutes together. Again, the image data sheets were valuable in detecting how people were spending their time and how much time was spent on each activity. The image data sheets mapped activities within the room and Blackboard™ provided an analysis of where the students spent their time online (see Appendix). In image 3, segment 3, a student and the teacher have regrouped to view aspects of a rock climbing movie. This grouping lasted for 10 minutes and included substantial discussion on body type and expertise of rock climbers.

Students were constantly inventive and creative about finding new solutions to improve the communication systems. The atmosphere and culture was consistently democratic and socially malleable. In image 4, segment 3, Ross has solved the problem of swapping between web pages to inform his discussion by his set of multi frame images for coaching. He quickly produced a common sense solution by printing out his multi frame images and propping them up against the screen. This blend of 'in the hand' and online resources was a strength of the programme as each participant could apply an appropriate percentage of their time in the way they chose. In addition, because the students were working in close proximity to each other, each person's new knowledge was automatically shared with the group.

The value of the image for coaching evidenced by image 5 and image 6 which were available online during this period (and so labelled segments 1-4). Image 5 shows Hayden Shaw, hockey Olympian in action. Image 6 is Jeremy's set of multi frame images for coaching.

Image Data: #8, 18 June 2004

Week Four: General mentoring session

The day after the Hayden Shaw guest discussion



18/6: image 1 segment 2.



18/6: image 2 segment 3.



18/6: image 3 segment 3.



18/6: image 4 segment 3.



18/6: image 5 online segments 1- 4.



18/6: image 6 online segments 1-4.

**Figure 4.5 Image data sheet: 18 June, from segments 1-4**

Towards the end of the programme, students were very focused on completing their task which was the development of a personal exercise programme. It was at this stage that the coaching and advice from the mentors came to full fruition. It was clear to see from image data sheet 17 in Table 4.4 that there was a renewed interest in students working individually and gaining specific personal advice in order to complete their assignments. By this time, students found working in the blended learning environment quite natural and moved easily from working in their hard copy workbooks, to communicating online to putting their new knowledge into practice on the sports field or in the weights room. This period of time resulted in data sheets of images which illuminated intense engagement (images 1 & 2, segment 2), the experience of discovery (images 3 & 4, segment 2) and delight (images 5 & 6, segment 2).

Image Data: #17, 20 July 2004

Week Nine: General mentoring advice

Active involvement in own programmes



20/7: image 1 segment 2.



20/7: image 2 segment 2.



20/7: image 3 segment 2.



20/7: image 4 segment 2.



20/7: image 5 segment 2.



20/7: image 6 segment 2.

**Figure 4.6 Image data sheet: 20 July, from segment 2**

## **The Camera and the Image Sheet**

Student response to the camera being used in the room was minimal right from day one. All of the students were involved in the process of using image to document sporting technique and so were accustomed to being photographed within a learning environment. On occasions during the first three days, students appeared to be minimally aware of the camera (looking at the camera and smiling) but from then on, the recording of image data appeared to go unnoticed. The students were not generally aware of other activities in the room as they were deeply engaged in communication via the online forum or in communication with each other.

The effect of the visual overview of an image data sheet was a valuable tool. It provided a time lapse bird's eye view of events occurring during a session. This visual data demonstrated the extent of student engagement with their learning and also provided evidence showing levels of learner involvement, pleasure and delight. The image data provided a new perspective on the teaching and learning environment for all concerned: students, the teacher and the researcher.

Some image data sheets include activities occurring in different locations. Sometimes a group of students worked online while others were outside producing multi frame images for coaching. In these cases, images of activities occurring simultaneously were grouped on the same sheets.

In order to bring the mentors 'to life' for the students, A1 size story boards were created to show the progress of the project. To begin the project, images of the facilitator and the guest experts were arranged on the boards. By the end of the first week, the boards included some of the conversation highlights and also images of the students participating in the discussions. This visual presence helped to connect the participants within the virtual project. In addition, it ensured that everyone was informed about all of the processes and the progress which had been made. Inside the SportLink site, images of the students working online were posted for the mentors. This provided a strong human element which complemented the multi frame images used for analysing technique.

### 4.3 Confident, Connected and Actively Involved

This section presents the interview data from a different perspective. It takes a slice across the data and examines it from a new standpoint – that of Question 3:

- How can personalised online learning with experts beyond the school contribute to students becoming informed, active participants in their own learning?

The open ended interview questions students were asked to respond to were:

*“How did you find the programme?”*

*“What would you like to comment on?”*

The second interview question which was not always necessary was,

*“What were the particular things that stood out for you?”* Interview prompts to gain more information were chosen with the intention of being supportive and non leading. For example, *“Can you tell me more about that?”*

The final interviews with students provided a broad view of their impressions of the learning design of SportLink. This data revealed many aspects of learner competence and behaviour. This data is analysed using the New Zealand Curriculum Key Competencies (Ministry of Education 2008). The initial analysis of data from this question however, highlighted a number of themes and indicated a high degree of conformity about what the students said. The themes which emerged and the relating data can be seen in Table 4.3.

**Table 4.3 Themes from the interview data: Aspects of value to students**

<b>Theme</b>	Mark	Tony	Jack	Jeremy	Mike	Hamish	Sam	Tom	David	Paul	Ross	Barry
<b>Tool for thinking</b>	✓	✓	✓	✓	✓	✓	✓		✓	✓		
<b>Value of expert knowledge</b>	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
<b>Real learning</b>	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓
<b>Working online and with images</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Owning learning, 24/7 access</b>	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
<b>Inspiring, transforming</b>	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
<b>Dialogue with others</b>	✓	✓	✓	✓		✓	✓		✓	✓	✓	
<b>Changed relationship with teacher</b>	✓	✓	✓		✓	✓			✓	✓	✓	✓

The eight broad themes describing the aspects the students valued emerged from the interview data were:

- The online process as a tool for thinking
- The opportunity to access the knowledge of experts
- The fact that for them it was ‘real’ learning with ‘real world’ others
- The method of working online using web transcripts and images/
- The fact that they were in charge of their learning with 24/7 access
- The inspirational, motivating factors when working with experts
- The opportunity to learn through a process of dialogue
- The changed relationship with the teacher

These themes were then compared with the New Zealand Curriculum Key Competencies (Ministry of Education 2008) and it was found that all of them could be accommodated within the five key competencies. Table 4.4 below shows the theme groups with reference to the five elements of the Key Competencies:

**Table 4.4 Student responses grouped by theme with reference to the five elements of the NZ Curriculum Key Competencies**

<b>NZ Curriculum Key Competencies</b>	<b>Key descriptors of the competency</b>	<b>Themes emerging from the research</b>
<b>Thinking</b>	Creative/critical/metacognitive processes. Understanding, shaping action, constructing knowledge. Seeking, using, creating knowledge. Ask questions, challenge assumptions.	<ul style="list-style-type: none"> <li>• The process as a tool for thinking</li> <li>• The opportunity to learn through dialogue</li> </ul>
<b>Using language, symbols &amp; texts</b>	Codes in which knowledge is expressed, written, visual, technological. Confidently use ICT to communicate.	<ul style="list-style-type: none"> <li>• Method/language of working online. Web transcripts &amp; images</li> </ul>
<b>Managing self</b>	A ‘can do’ attitude, enterprising, resourceful, reliable, resilient. Establish personal goals, manage projects, set high standards.	<ul style="list-style-type: none"> <li>• Being in charge of their learning with 24/7 access</li> <li>• The inspirational, motivating factors</li> </ul>
<b>Relating to others</b>	Interacting effectively with diverse range of people in a variety of contexts. Recognise different points of view, negotiate, share, cooperate.	<ul style="list-style-type: none"> <li>• The inspirational, motivating factors when working with experts</li> </ul>
<b>Participating &amp; contributing</b>	Active involvement in communities, local, national, global. Capacity to contribute as a group member, make connections with others.	<ul style="list-style-type: none"> <li>• ‘Real’ learning with others</li> <li>• The changed relationship with the teacher</li> </ul>

**Table 4.5 Analysis of students’ perspectives on the value of the online partnership with experts mapped against the NZ Curriculum Key Competencies**

<p><b>Key Competencies</b> (Capabilities for living and lifelong learning)</p>	<p><b>Student perspectives</b> (Value of the online partnership)</p>
<p><b>Thinking</b> Using creative, critical, and metacognitive processes to make sense of information, experiences, and ideas. Developing understanding, making decisions, shaping actions, or constructing knowledge. Intellectual curiosity is at the heart of this competency. Students seek, use, and create knowledge. They reflect on their own learning, draw on personal knowledge and intuitions, ask questions, and challenge the basis of assumptions and perceptions.</p>	<p><i>Working asynchronously made me really think about constructing a good question – I actually started to think differently as I tried to get to the specific point.</i> [Tony] <i>I like to make up my own mind – but I will listen – and being able to incorporate the expert’s advice is what it’s all about isn’t it?</i> [Hamish] “It wasn’t just idle chat – it was getting clear about exactly what information you needed next.” [Mary] “What made a big difference to me was having time to think before making a posting.” [Hamish]</p>
<p><b>Using language, symbols, and texts</b> Working with and making meaning of the codes in which knowledge is expressed - written, oral/aural, and visual; informative and imaginative; informal and formal; mathematical, scientific, and technological. Students can interpret and use words, number, images, movement, metaphor, and technologies in a range of contexts. They confidently use ICT (including, where appropriate, assistive technologies) to access and provide information and to communicate with others.</p>	<p>“It was easy for us to work – everybody was relatively computer literate. It was user friendly because everyone’s used to using hotmail and stuff. If we’d had to write a letter, it would have been laborious and lots of people would have ended up not doing it.” [Tony] “The links (hyperlinks) from by the mentors were really helpful – and the vids and DVDs- it meant we could get to our information straight away.” [Jack] “Multi frames (images) for coaching were really beneficial.” [Mark] “I did really enjoy the synchronous chat though – it was more of a conversation... but it was more of a fun thing though rather than a learning thing I think.” [Tony]</p>

<p><b>Managing self</b></p> <p>Self-motivation, a “can-do” attitude, and students seeing themselves as capable learners. Students who manage themselves are enterprising, resourceful, reliable, and resilient. They establish personal goals, make plans, manage projects, and set high standards. They have strategies for meeting challenges. They know when to lead, when to follow, and when and how to act independently.</p>	<p>“I think the speed of getting to the information, especially the mentors’ web links is why it works. We don’t even know about some of this in school – well we do know about it – but it would take years to research the subject by yourself. And it’s not like when you research facts online – it’s having a conversation with someone who points you in lots of right directions.” [Mary]</p> <p>“The process of choosing your sport and formulating the questions and finding out how to develop the training programme is what it’s all about. It’s something I wouldn’t have done otherwise – the fact that I could choose my sport and be involved in this programme has helped me see what I could do.” [Paul]</p>
<p><b>Relating to others</b></p> <p>Interacting effectively with a diverse range of people in a variety of contexts. The ability to listen actively, recognise different points of view, negotiate, and share ideas. Students who relate well to others are open to new learning and able to take different roles in different situations. They are aware of how their words and actions affect others. They know when it is appropriate to compete and when it is appropriate to co-operate.</p>	<p>“It’s like going to a lesson from a professional – it doesn’t mean that you’re going to be taking in everything that they say – but at least you’re open to that information and getting what you do know reinforced – it’s definitely going to affect your performance.” [Tom]</p> <p>“Online, it’s only polite to say the things you would normally say if you were talking to someone. If you don’t do that, it’s a bit curt – it’s factual and it puts your back up a bit – ‘cos it’s not very human – it’s just like a computer talking to you. It’s like if you say goodbye to someone you might give them a hug or shake their hand – it’s the same online, you say ‘thank you’, ‘nice to hear from you’, those little niceties that you include in normal interaction.” [Tony]</p>
<p><b>Participating and contributing</b></p> <p>Active involvement in communities - local, national, or global. A capacity to contribute appropriately as a group member, to make connections with others. Students who participate and contribute in communities have a sense of belonging and the confidence to participate within new contexts.</p>	<p>“This has been an awesome group to be part of – we wouldn’t normally share so much with each other in the classroom.” [Ross]</p> <p>“[Mentor] was the standout for me because he is such a humble person and full of valuable knowledge that he passes on to us without hesitation even though he is respected worldwide.” [Barry]</p>

#### **4.4 A 21<sup>st</sup> Century Model of Learning**

In answering this question, the first thing which must be established is the nature of 21<sup>st</sup> century teaching and learning in NZ. While this could be seen from a variety of perspectives the perspective which I have taken for the purpose of this research is the perspective of the New Zealand Ministry of Education in its publication *Let's Talk About: Personalised Learning* (2007a). The tool for analysis consists of a table which shows expectations from the publication which are detailed in the section "What will personalising learning look like for you?" (p.10). Table 4.6 relates these expectations to evidence from the research. This evidence is discussed in Chapter five.

**Table 4.6 Evidence from the research grouped by theme with reference to *Let's Talk About Personalised Learning* (Ministry of Education 2007a).**

<b><i>Let's Talk About: Personalised Learning</i></b>	<b>Evidence from the research</b>
Students will have high expectations.	Students reported that the high quality of advice from the experts significantly raised their expectations. Students demeanour and attitude transformed. Students were so committed that they even connected to the project while at Outdoor Pursuits Centre, Turangi.
Students will take control of their own learning.	Students were able to work on their personal choice of sporting code for the first time. Students accessed site from home 24/7. The teacher stepped back & joined group as a fellow learner.
Students will be able to work with others.	The learning design is intrinsically collaborative. Working with others was integral to the process in both the face to face forum and in the online environment.
Students will have an understanding of the learning process, identifying the knowledge they have gained and also the next steps.	Students drove their own inquiry process. E-portfolios demonstrated the knowledge gained. Next steps were established in consultation with the group, the teacher and the mentors.
Parents, families/whanau will be partners and provide support at home. They will understand how their children are progressing & be involved in planning & support.	Families were able to access the students work with group members having 24 hour access. The use of images created strong interest for families.
Teachers will appreciate that all students can learn.	All students AND teachers can learn. The teacher was able to revise his opinion of the abilities of some students when he saw them working online.
Teachers will have high expectations for every student.	The online format offered all students an equal opportunity to succeed. The teacher discovered that he could have high expectations for each student.
Teachers will access and use knowledge about how their students are achieving for future learning.	The process was transparent. It was easy to see how everyone was performing as the web pages were common.
Teachers will design tasks that strengthen students' skills to work in groups and support individual learning.	The online project was a comprehensive piece of learning design which involved group collaboration and resulted in individual projects.
Teachers will build inclusive learning communities where students support each others' learning.	This was an inclusive learning community where students and the teacher supported each others' learning.
Teachers will have a wide range of teaching strategies including new technologies and apply them to creatively support students' learning.	Rather than 'apply' strategies which suggest 'doing something' to the students, the teacher provided a rich learning environment and facilitated a student inquiry process. The tools were online discussion, synchronous & asynchronous. Partnerships with experts. Advice from experts. WWW support. Digital images for coaching.

## Chapter 5

### Discussion

#### 5.0 Introduction

In Chapter 3, the research questions for this thesis were introduced:

- What value do students find in personalised online learning with experts beyond the school?
- How can personalised online learning with experts beyond the school contribute to students becoming informed, active participants in their own learning?
- What contribution can personalised online learning with experts beyond the school make to 21<sup>st</sup> century teaching and learning in New Zealand?

Ethnographic methods were used to collect data for this research. These methods were the collection of web transcripts, observer notes, an image photo journal and interviews. Interpretive phenomenological analysis was used to analyse the participants' views about the project. Before the interviews, students were given transcripts of their web conversations and copies of the image data sheets which detailed the way they were working in the room.

In this chapter I will first talk about the data, (5.1), then focus on what the data tells us about the issues raised in the introduction (5.2). Finally, in (5.3), I will take a broader look at what the implications might be for learning and for secondary schools. This order of the discussion corresponds with the order of the three research questions as they appear in the findings. The discussion reflects the relationship between the research questions in that Question 1 informs Question 2 and Question 3 can only be answered in light of an examination of the data related to Questions 1 and Question 2.

## 5.1 Participants' perceptions of SportLink

As Table 4.2 shows, the answers to research question number one, 'What value do students find in personalised online learning with experts beyond the school?' is analysed in themes making use of Maslow's matrix of human needs. Student comments are also presented in two categories, 'Learner engagement' and 'Relevance to learning.' The selection of Maslow's *Hierarchy of Needs* as a tool for evaluation of this question was influenced by feedback from students who noted that the online learning environment made positive changes to their level of comfort and well being. Their comments indicated that during the period of time they worked on the SportLink project, their needs were being met in ways which were somehow different from their experiences in the traditional classroom.

In Chapter Two, the Literature review, I drew parallels between Maslow's (1987) hierarchy of needs and 'hauora' – or wellbeing. The question might be asked – why was the curriculum statement on hauora not used as the evaluation tool? Employment of the rubric on hauora would have resulted in the same findings, however, in order to make the most appropriate choice of tool, my decision was guided by examining the purpose of this research. At the conclusion of Chapter One, Introduction, I suggested groups of readers who may have an interest in the study. These range from educators at the early childhood level through to educators at tertiary level. In addition, there is also a possibility that there are aspects of this study which will be of interest to the wider community. With this scope, which includes a variety of nationalities, it seemed appropriate to use the more generic model suggested by Maslow. The inclusion of the curriculum statement on hauora is, however, still important within the present educational climate where there is a strong focus on lifting educational outcomes for Maori. While the consideration of race has not been included in this study, it is useful to note within this discussion, that one of the twelve participants was Maori.

Maslow's framework captures the students' perceptions of the SportLink project by nesting the aspects they found valuable alongside the four descriptors:

- Physical safety and security
- Social belonging

- Self esteem
- Self actualisation

Maslow's *Physiological needs* category which encompasses the human need for food, shelter and health has not been included in this analysis as it fell outside the scope of the work in the school. As students responses were plotted in a themed fashion alongside Maslow's hierarchy of needs, a 'broad picture' framework emerged of what students found valuable.

Maslow originally built his 'hierarchy' of needs in ascending, (hierarchical), order but for the purpose of this research, the 'D' needs – or 'deficiency needs' are seen as a whole, and merely as a group prerequisite for self actualisation – or moving to fulfil one's potential. Consequently, where a student is quoted at the 'social belonging' stage, this does not mean that he is limited to operating at this level. What it does mean is that his particular statement represents this 'theme' well. It provides an example of how the student saw the project meeting a personal need. Other students who have commented along similar lines are added and weighted as a bracketed number, e.g. [8].

The data which is analysed for question one was drawn from participants' interview responses. The open ended interview starter was conversational in nature and allowed for wide interpretation by the interviewees. The initial question, "*How did you find the programme?*" was sometimes followed up with "*What would you like to comment on?*" if the response could be broadened. The second question which was usually not necessary was "*What were the particular things which stood out for you?*" In the majority of cases, prompting was not necessary as students were enthusiastic respondents. However, if more detail was required, the prompt was "*Can you tell me more about that?*" or "*Can you tell me about the way you were learning?*"

### **Self Actualisation – Being the Best You Can Be**

Individuals who demonstrate exponential change are described by Maslow (1987) as 'self-actualising,' having transcended their 'deficiency needs.' Maslow suggests that when people achieve this stage, they are in the process of being able to activate their 'being' or 'growth needs' and that they are able to use them as

ongoing motivators and drivers of behaviour. Self actualisation, according to Maslow, is the instinctive need of humans to make the most of their abilities and to strive to be the best they can be. He suggests that when humans reach this stage of their needs framework, people work towards fulfilling their potential and becoming the best that they are capable of becoming.

Seven out of twelve students made comments suggesting they had experiences at the level of 'self actualisation.' For the purpose of this research, self actualisation is taken to mean that students are independently developing skills towards fulfilling their potential. It implies self sufficiency, self management and often creative approaches. Clues to this theme were found in student comments which suggested they were taking independent action which built their learning over and above the requirements of the school curriculum. For example:

*I want to take every opportunity. When I went to OPC, (Outdoor Pursuits Centre), I didn't want to miss out on the discussion so I borrowed Mr W's laptop and connected to the internet in the cabin. (Mary)*

This student was concerned that she might miss taking part in a three day expert mentor discussion and so created a solution where she borrowed her teacher's laptop so that she could take advantage of an outdoor education environment *and* the online opportunity. Other student comments in this category included "My expectations for myself were too low", "I didn't realise I could do this" and "Working with (mentor) has really opened my eyes and made me see what I can do".

Paul provided strong evidence of the value of the online partnership for students who were not strong achievers within the traditional classroom system.

*I haven't done real well at school but even on the first night I accessed the web pages from home – there was heaps of stuff there for me. There's no way I could have studied snowboarding in the classroom. (Paul)*

In my research journal at this time, I had noted that Paul's demeanour had changed. Previously, he had appeared lethargic and hesitant to communicate. It occurred to me that the benefits of working online in this way could be of real

significance for a student who did not relate with enthusiasm to the face to face classroom. For Paul it appeared to be rather like discovering an oasis in the middle of a desert. He had a new sense of purpose:

*Today I saw Paul smile for the first time when he said he had found Peter's message and followed up the pages at home. He seemed somehow straighter – not hunched over. He looked purposeful and not lost. (Researcher journal 28 May 2004)*

### **Self Esteem**

For the purpose of this research, the theme of 'self esteem' from Maslow's model includes 'self respect', 'mastery', 'independence', 'responsibility' and 'achievement'. Consequently, comments about weighing evidence, decision making, and achieving personal goals have been collected in this category.

The fact that the students were able to choose their own sporting code for the first time made a strong impact on their sense of personal satisfaction with the project. Prior to this, the teacher had taught the achievement standard by using his own choice of sporting discipline. He had done this in order to prepare and present a high quality offering of information. He would have found it impossible to prepare the same level of material to cover a wide range of sporting codes. However, having access to a group of sporting experts provided the opportunity for student personal choice. This had the effect of making the learning immediately more relevant and desirable. Seven students voiced enthusiasm for working on their own sport. Tom put it this way, "Being able to choose our own sporting codes was the key."

Another factor which featured strongly in students' comments was the changed role of the teacher and the resulting changes in learners. As was discussed at the beginning of this chapter, the teacher had previously operated in a predominantly directive manner. A colleague visiting the project commented on the teacher's changed practice saying "This is different – with (the teacher) it's usually my way or the highway!" During the project, the teacher took a role as 'learner', sitting within the group, contributing to online discussion and from time to time assisting students with literacy concerns. He also played a role as enthusiastic support person, showing interest and delight in his students' independent progress. Tom

explained how the teacher's changed role had resulted in the students becoming more independent and self managing:

*(the teacher) took on more of a student role...he was learning in with us as well which was kind of good to see – it meant that we were responsible.*

There had been no previous discussion of the fact that the teacher would adopt this learner role; his actions as a learner occurred naturally when he was included within a group of sports experts for whom he had a high degree of respect.

With a wide variety of experts involved in the project it was inevitable that some of the opinions would not concur. At the beginning of the second week, the students received two conflicting opinions concerning fitness. They voiced their concern. Not only were they unsure of which advice to take, but they were suddenly aware of the fact that the programme which most had believed would deliver them 'the answers' wasn't working as they had expected it to. This resulted in an anxious and wide ranging face to face group discussion about the various merits of each opinion. The emphasis in the discussion was on who was 'right.' However, at a point during this discussion, students quite suddenly became aware that receiving conflicting opinions could be helpful and had, in fact, been a catalyst for their discussion. They had discovered by themselves how to weigh the comparative evidence from two points of view and test the ideas against their own judgement. After this conclusion had been reached independently by the students, the teacher supported their process, commenting, "This is exactly what is required when you're working at this level – you need to be able to look at something from different viewpoints, debate an issue and come to your own conclusions."

Empowered by this understanding, the group achieved a new independence, and were no longer as 'in awe' of 'the experts' and ready to take all advice at face value. With this new understanding came a significant appreciation of the function of dialogue for thinking:

*If that hadn't happened, we wouldn't have ever had this discussion and we'd still be here thinking that they were going to give us all the answers – I really did think that*

*was how it would be with them being such experts and all. It would be a lot easier if it was like that! (Hamish)*

The students had developed a more confident attitude and appeared to be more ‘sure of themselves.’ Everything about the way they conducted themselves had noticeably ‘sharpened’:

*They were alert, with quite upright postures and squared shoulders. Their facial expressions communicated slight amusement, the excitement of discovery/achievement and a kind of warm pride in themselves. They looked like a sports team after a significant win. (Researcher journal 1June 2004)*

One student summed up what appeared to be the group’s new position within the online learning community:

*I like to make up my own mind – but I will listen – and being able to incorporate the expert’s advice is what it’s all about isn’t it? (Hamish)*

In the final interview, Tony recounted the experience of the group coming to the collective understanding that there wasn’t a ‘perfect answer’ out there and that they, as students, had achieved a degree of maturity and intellectual independence. “We got to know our own minds,” he said. “It didn’t turn out to be anything like we thought – we were pretty sure they had the answers.” He had also listened carefully to what the teacher had said about the importance of debating issues and interestingly, six weeks after the teacher’s comment, rephrased the teacher’s advice:

*NCEA is about this kind of thing – thinking about the good and bad ideas – to get excellence you have to do the pros and cons so the more information you can expose yourself to – the better the choices you can make. (Tony)*

### **Belonging to the Group, Social Belonging, Cooperation**

The aspect of ‘belonging’ to the group was strongly commented on by students. Eight students voiced the desire to be able to continue to be part of such a group. The fact that the other four are not counted in this theme does not mean to say that they didn’t value the group – it could just mean that other comments took precedence in their interviews. It is helpful to recall at this stage that all of the

students' comments were made informally and not as a response to a direct question. Students used words such as 'awesome', 'primo', 'choice' and 'wonderful' applied to their experience working as a group.

*It was a wonderful experience to work with great athletes and sports scientists and to be able to talk about and access their huge supplies of knowledge. I hope this is something I can keep using later. (Mark)*

Other students, when speaking of their high degree of motivation and enthusiasm for being part of the group recounted stories of specific events:

*At one stage we had this whole range of people in the room – we had a guest expert, a biomechanist and a fitness advisor there – it meant you really wanted to be there. (Hamish)*

It can be seen from this comment that Hamish, (as did seven others), spoke about the group with absolutely no reference to the fact that a large percentage of the work had been conducted online. His use of '*the room*' meant the virtual room which students saw as being an extension of their face to face environment. Mark's comment reads as though they had been totally involved into a face to face situation. Phrases such as '*a wonderful experience to work with*' suggest the degree of involvement.

### **Comfort, Safety, Fairness and Justice**

Maslow holds that if a person is fearful for his safety, this need will take precedence over most others. The sports students reported a high degree of comfort in working as a collaborative group, advised by online experts. The change in teacher behaviour had created a shift in perception about who was in authority and what the students' own place in the learning group was. As the teacher maintained his role as a learner, there was a new tone of respect in the students' voices when they spoke to him. When it became apparent that the teacher needed help with some aspects of using the SportLink site, the students displayed kindness and helpfulness, even anticipating when he might need assistance. As the teacher's overt authority subsided, there was a noticeable increase in the independence and responsible attitudes of the students. They were independently communicating with experts who treated them as colleagues and

they were working engaged in an inquiry which focused on their personal goals and interests. Tony put it this way:

*Everyone is sort of equal by being online. If we went to see a lecturer at the Uni, we might be kind of afraid...but when you just type away...and at the same time, we'd be talking to other people in the class who were doing rugby and we'd amalgamate our ideas as well. (Tony)*

The notion of comfort was voiced by ten participants, eight of which suggested that their experience was '*better than school.*' Interestingly, none of the eight mentioned that they were at school.

In summary, all students found aspects of the SportLink project which they valued. Seven gave clear indication that they had found the project helpful in moving towards achieving their potential. Being involved in a learning activity which focused on their personal goals and interests was highly valued as was the opportunity to engage in dialogue with experts who treated them as colleagues. Working as a group was valued unanimously and students reported a high degree of comfort and satisfaction with the process. The change in the teacher's usual directive approach, as he became a group member alongside subject experts, was matched by a corresponding increase in the confidence and self managed learning of the students.

## **5.2 A Relationship with the Key Competencies**

The Key Competencies (Ministry of Education 2008) are used as an evaluation tool for research question 2, 'How can personalised online learning with experts beyond the school contribute to students becoming informed, active participants in their own learning?'

In 5.1, students' perceptions and satisfactions with the mentor network were examined. In 5.2, the interview data is examined again and a view *across* the previous data is taken. This time the data is examined for its relationship to the NZ Curriculum Key Competencies, *Thinking, Using Language, Symbols and Texts, Managing Self, Relating to Others, Participating and Contributing*. The analysis is undertaken using the model shown in Table 4.5 *Analysis of students'*

*perspectives on the value of the online partnership with experts mapped against the NZ Key Competencies in Chapter 4.*

## **Thinking**

Using creative, critical, and metacognitive processes to make sense of information, experiences, and ideas. Developing understanding, making decisions, shaping actions, or constructing knowledge. Intellectual curiosity is at the heart of this competency.

Students seek, use, and create knowledge. They reflect on their own learning, draw on personal knowledge and intuitions, ask questions, and challenge the basis of assumptions and perceptions. (Ministry of Education 2008)

If intellectual curiosity is at the heart of this competency then this competency is at the heart of the SportLink project. Students sought, used and created new knowledge for themselves as they engaged with sports mentors, discussing sports science and analysing technique. They reflected on their progress as individuals and collectively as a group. They worked hard at mastering the art of asking powerful questions and came to understand the value of dialogue in forming conclusions and beliefs for themselves. Just as Burns' (2006) writing student found when she said "It is about ideas and communicating...writing involves responsibility and thinking and commitment" (p.43), so did these sports students discover that thinking within the process of online dialogue resulted in a process of clarifying and organising their thinking. Confirming Lai's (1999) thoughts about CMC's value for reflection and the possibility of thoughtful, well constructed replies, Tony talked about the asynchronous aspect of the discussion allowing him to think about "constructing a really good question" and David reported that he got a lot more out of the asynchronous discussion because of having time to think about what he wanted to say first. He said "It's like asking myself questions and then I realise that I know the answers to some of those things – so in the end the question I write in the discussion is a more important one".

Seven students mentioned aspects of thinking in their responses with their comments including aspects of creative and critical thinking and also metacognition. Students consistently demonstrated creative thought about the way they used the online tool, for example, the way Ross got around the shortcomings

of having his coaching image on one web page and his discussion on another – he created a new solution by printing the image out and using a combination of hard copy resource and the web page. However, there was also evidence of creative thinking within the online work. Creative thinking involves the generation of new ideas or concepts – or making new associations between existing ideas and concepts; this was the core business of the project with students investigating the field of sports science and developing their own personal exercise programme. The fact that students were developing their own ideas and creating new concepts instead of being given all of the information was born out by this comment on the process from Mary. Speaking about the mentors, she described the divergent process as “having a conversation with someone who points you in lots of right directions.”

Critical thinking involves making a decision or solving a problem. It is about making judgments on what to believe after reflecting on evidence. In 5.1, I talked about the students’ experience of receiving conflicting advice and questioning which advice was ‘right’. The students finally came to the realisation that even though their advisors were experts, critical thinking had to be applied in order to come to conclusions which were right for them. Within this process, the students achieved a new level of personal learning independence. Hamish valued the mentors’ advice but knew it needed to be critically examined when he said, “Being able to incorporate the experts’ advice is what it’s all about, isn’t it?”

Metacognition is to do with examining our own thinking processes, it is thinking about thinking and the processes that are related to thinking, such as learning. Students noticed that they were thinking in different ways in this environment and recognised that the process of formulating the online question which might lead to a desired answer was a process of refining exactly what they wanted to know. Tony reflected on his experience:

*I actually started to think differently as I tried to get to the specific point.*

It is suggested by these comments that students were reflecting on their own learning, drawing on personal knowledge and intuitions, asking questions, and challenging the basis of assumptions.

### **Using Language, Symbols, and Texts**

Working with and making meaning of the codes in which knowledge is expressed - written, oral/aural, and visual; informative and imaginative; informal and formal; mathematical, scientific, and technological.

Students can interpret and use words, number, images, movement, metaphor, and technologies in a range of contexts. They confidently use ICT (including, where appropriate, assistive technologies) to access and provide information and to communicate with others. (Ministry of Education NZ Curriculum 2008)

With ICTs forming the primary method of communication for this project, the evidence suggests that students managed this very competently. In addition, these students incorporated some extra ‘codes’ which increased their range of contexts. As well as the written, oral/aural and visual codes which were apparent in the face to face work, they were competent in the use of asynchronous online discussion, synchronous chat, the use of short video on CD, movie on DVD, and the use of a digital still camera for multi frame images in coaching. The fact that a large percentage of the communication was online was seen by the students as an advantage and more aligned with the speed of communication to which they were accustomed.

*It was easy for us to work – everybody was relatively computer literate. It was user friendly because everyone’s used to using hotmail and stuff. If we’d had to write a letter, it would have been laborious and lots of people would have ended up not doing it. (Tony)*

Burns’ (2006) work with her writing students lends support to Tony’s view. She explains that her students had found their writing portfolio to be useless drudgery but when she introduced them to online mentors, “something fairly profound happened” (p.39). Her students genuinely appeared to enjoy writing to their mentors and did so even when they were not being graded.

Jack also found the online format had more to offer than the general classroom:

*The links (hyperlinks) from by the mentors were really helpful – and the vids and DVDs. It meant we could get to our information straight away...*

*You can get right into it – not like usually in the classroom; sometimes I don't get much done (smile) depending on what's going on, of course. (Jack)*

## **Managing Self**

Self-motivation, a “can-do” attitude, and students seeing themselves as capable learners.

Students who manage themselves are enterprising, resourceful, reliable, and resilient. They establish personal goals, make plans, manage projects, and set high standards. They have strategies for meeting challenges. They know when to lead, when to follow, and when and how to act independently. (Ministry of Education 2008)

Ten students mentioned feelings of independence and confidence in meeting the challenges they were set. Paul put it this way:

*The fact that I could choose my sport and be involved in this programme has helped me see what I could do.*

And Ross offered this:

*I've done things I never would have done in class – it gives you confidence to believe in your own judgment.*

Each of the sports students managed their own project and was responsible for the direction of their inquiry. It was ‘work based’ and in this respect was similar to the Ultraversity project set up by Ultralab at Anglia Ruskin University in the United Kingdom (Powell, Tindal & Millwood 2008). In the Ultraversity project, students reported appreciating the opportunity to negotiate their approach to learning and also having a degree of choice over when to study. In the SportLink project, students found that because they were learning about something they were already passionate about, that being able to access their work from their home was appealing. A student from one of the art projects (Stevenson 2002), experienced a significant change in personal independence when she began working independently online with her mentor, saying that the experience was ‘more comfortable’ and that she liked working with her mentor because she could discuss ideas “without being told exactly what to do.”

## Relating to Others

Interacting effectively with a diverse range of people in a variety of contexts. The ability to listen actively, recognize different points of view, negotiate, and share ideas.

Students who relate well to others are open to new learning and able to take different roles in different situations. They are aware of how their words and actions affect others. They know when it is appropriate to compete and when it is appropriate to co-operate. (Ministry of Education 2008)

All twelve students commented positively about the experience of interaction with mentors outside the school. Seven of the twelve students referred to the fact that working online had increased their sense of comfort and effectiveness in interacting with others. The ability to ‘listen actively’ was, in the case of this project, the ability to ‘read and assimilate online conversation’ actively. Students commented favourably on this aspect, noting the advantage of having a permanent record of words of advice:

*It's good having the words right there – you can go back to it and think about what they said. (Barry)*

This competency also suggests that students who relate well to others are open to new learning and able to take different roles in different situations. This concept includes the idea that learners need to be aware of how their words and actions affect others. The students were very perceptive about the manner of their conversation online, often adjusting their language and tone to that of the mentors. They were also interested in talking about it:

*Online, it's only polite to say the things you would normally say if you were talking to someone. If you don't do that, it's a bit curt – it's factual and it puts your back up a bit – 'cos its not very human – its just like a computer talking to you. It's like if you say goodbye to someone you might give them a hug or shake their hand – it's the same online, you say 'thank you', 'nice to hear from you', those little niceties that you include in normal interaction. (Tony)*

Also included in this competency is a suggestion that learners will be able to judge when it is appropriate to compete and when it is appropriate to co-operate. These sports students were used to competing but the collaboration which is a feature of this online group appeared to come naturally to them. They all showed

interest in each other's work and were happy to share information. There was a strong willingness to help each other by taking the coaching images, helping with exercise programmes and sharing resources. A strong feature which contributed to this cooperation was the fact that everybody's information, resources and discussion was available to the other members of the online group. The online class room acted in such a way as to de-privatise everyone's work.

### **Participating and Contributing**

Active involvement in communities - local, national, or global. A capacity to contribute appropriately as a group member, to make connections with others.

Students who participate and contribute in communities have a sense of belonging and the confidence to participate within new contexts. (Ministry of Education 2008)

The activity of these twelve students and their teacher within the SportLink project is an obvious match with this competency. Nothing could be further removed from passive classroom learning. This competency suggests that students will have active involvement in communities – local, national, or global. These students certainly achieved that. Lai's (1999) notion that the real potential of the Internet lies in its capability to help users reach out to other people is well supported by the SportLink project where students demonstrated the capacity to contribute appropriately as group members and make connections with others. These aspects of this competency, which might have to be engineered in a more formal learning environment were found intrinsically in this model. Consequently, I have marked this section of the analysis tool as being positive for all members of the group because their participation and contribution to the group has been implicit in their other comments. In addition, I am able to make a reliable judgement about this having taken the role of participant observer for the duration of the project.

### **5.3 Personalising Learning in the 21st Century**

In this section I begin to relate the findings to the issues raised in Chapter one. These issues are drawn from the Ministry of Education's document *Let's Talk About Personalising Learning* (2007a). They concern the provision of successful learning opportunities and what they might look like. It is suggested that students

will have high expectations, take control of their own learning and be able to work with others. They will have a better understanding of the learning process, families/whānau will be involved in their children's learning and teachers will appreciate that all students can learn. In providing successful learning opportunities, teachers will have high expectations of every student and access knowledge about how their students are learning. They will build inclusive learning communities where students support each other's learning. Finally, they will develop a wide range of teaching strategies, including using new technologies, and apply them creatively to support students' learning.

The Ministry of Education's document *Let's Talk About Personalised Learning* (2007a) asks: "What will personalising learning look like for you?" (p.9). The overarching question which is addressed in this section is: What does this particular example of personalised online learning have to offer 21<sup>st</sup> century teaching and learning in NZ?

### **High Expectations and Understanding How Students are Learning**

Previously in this discussion, it was demonstrated that students valued the opportunity for self directed learning and active inquiry. While students were guided by the mentors and their teacher, the students themselves took ownership of what was being learned and how they would learn it. This new independence was a powerful motivator for students to engage with their learning with unexpected energy, as was found in Burns' 2006 study on writing students and again in the artist student projects (Stevenson 2002). The sports students had been given the opportunity to choose their own sporting code as a subject for study and could therefore apply their learning in the field of sports science to their own personal development. In developing a personal exercise programme and analysing their own technique, students, coached by the mentors, were engaged in learning which was personalised to their goals and interests. This active acquisition of new learning skills provided the students with a strong foundation for being able to access, evaluate and apply knowledge.

The personalised nature of the inquiry meant that these students had high expectations for themselves. This culture was quite different from their previous

model of work where the teacher had felt the responsibility to motivate his students, by various means, towards having high expectations for passing the achievement standard. High expectations for each student became intrinsic within an environment where the goals were personal and the dialogue involved expert and well respected sports people.

The nature of the online work meant that it was a simple matter for the teacher to access knowledge about how the students were working. All participants had access to the discussions and therefore the web transcripts. The virtual space, SportLink, was available at any time and from any location which provided an Internet connection. With this facility, the teacher had access to the 'working notes' of all of the students. In addition, the student work online provided them with a valuable e-portfolio. Aspects of this work were transcribed into hard copy workbooks which would later be presented for assessment. These workbooks could accommodate hard copies of the multi frame images for coaching alongside resources obtained from other avenues. In this way, the teacher had available to him several sources from which he could draw information about student progress and needs.

A significant factor in the students managing their own learning and having high personal expectations was the change in behaviour of the teacher. Firstly, he had relinquished having total control over what was being learnt. Instead of choosing the sporting code to be studied, he had allowed the students to learn about their own codes of sport. Secondly, instead of delivering packages of knowledge related to the achievement standard, he provided them with the requirements and the assessment schedule and guided the students as they pursued their goals with the mentors.

Students were eager to enter into a wide ranging dialogue with mentors which soared way above and beyond the limits of the achievement standard. In this way, the expectations the students had for themselves were considerably higher than the expectations which the teacher might have applied to passing the achievement standard. Students were engaged in real world learning which was continually related to current research. It was clear that new roles had been established between the learners and those who supported their learning (Hargreaves 2003)

and that the contribution of the mentors had significantly changed the group dynamic.

The teacher was surprised at the level of student engagement and was very aware that something extraordinary had happened, saying, “I used to be a bit of a control freak but now I can see all this learning going on around me.” This teacher, supported by the mentors, had no need to apply learning strategies and motivational carrots. There was a new mood in the room where, in a similar fashion to the art students, (Stevenson 2002), students and their teacher were moving forward in a unified direction. The collaborative online learning model coupled with the shift in teacher behaviour had allowed the students to shine. They had been given personal responsibility which they whole heartedly embraced. Ironically, it was what the teacher had stopped doing, as was the case with the artist projects (Stevenson 2002) and the writers study (Burns 2006) which contributed so profoundly to raised student expectations and self managed learning.

### **Learning Communities Where Students Support Each Other**

This community’s ability to work with others has been well covered in the previous sections on ‘relating to others’ and participating and contributing’. What has not been mentioned yet is the important role played by dialogue within that relationship and its role in the creation of new knowledge. Active learning communities such as SportLink provide a place where students can express and explore interests, raise and respond to questions and experiment with ideas. According to Marantz & England (1993) cited in Lai (1996), this type of community allows students to examine relevant information and to broaden and deepen individual ways of thinking about the world. In considering and evaluating alternative views, the ability to be able to communicate effectively is paramount.

It has been established in this study that students found it pleasurable for there to be an equality of relationships and authority structures within the learning group and that within this environment collaboration and dialogue were able to flourish. The students reported having high expectations for themselves within this context where they operated within a learning model where they were inspired rather than

having expectations placed on them by others. There was a notable absence of a ceiling of teacher ‘prescribed’ success. The evidence in this study shows, as was suggested by Lai (1999), that the Internet can provide the door through which students are able to move outside their usual environment, to communicate with others and ‘reach for the sky’.

### **A range of strategies for teachers including new technology**

The SportLink model provided a flexible environment where the focus was on nurturing the learner. It could be seen as a classroom with expandable walls which, via technology, extend into the community and where the focus remains on learner potential instead of on merely passing the exam. This lack of focus on a national assessment in no way precludes the attainment of good grades. As was found in this study, when students are given the opportunity to ‘fly’ and self manage, they set goals for themselves which can be higher than those expected by the teacher. This same learner centred approach resulted in a low achieving art student gaining a scholarship mark in Bursary painting (Stevenson 2002). The mentor working with this student had, by focusing on the student’s personal success, provided her with a learning environment where she was both comfortable and inspired to achieve.

In Chapter one I touched on the idea of learner ‘success’ as it relates to 21<sup>st</sup> century learning. This discussion is an important one for secondary schools as they adjust their learning programmes and teacher practices to align with a changing meaning of what knowledge has become. Gilbert (2005) has suggested that we are developing a totally new set of ideas about knowledge and that it is now more aligned with the interactions between people and is something that we ‘do’. Siemens (2006) provides us with an ecology model of knowledge in a process of constant growth and change within networks of learning and the Secondary Futures (2007) group tells us that employers increasingly want workers who have:

- The skills to harness the diversity of expertise, experience and perspectives contributed by staff
- An ability to create new knowledge by accessing, sharing, analysing and integrating information

- A genuinely collaborative approach
- An ability to carry out multiple roles simultaneously (p.5)

Most young people, using technology as part of their daily lives, already harness expertise, share information, collaborate and multi task. They employ technology to tailor their informal learning to their own interests. Constantly accessing information of relevance to themselves, they communicate with others who contribute to their learning in a variety of ways. In this way, they already exist inside informal learning communities. Consequently, the voices we need to hear most are those of the students themselves. As has been seen in the artist project (Stevenson 2002), the writers study (Burns 2006), and again confirmed in the SportLink project, it is student voice which is providing valuable information and feedback and which has the power to help reposition the lens through which we see 21<sup>st</sup> century teaching and learning.

*Our discussions must always begin with children and young people – how to design, deliver and evaluate education programmes that will contribute to all of them being prepared for successful futures in a 21st century world. (Struthers 2007)*

This small scale study was limited to a group of twelve senior secondary students learning online over a discreet period of eight weeks. This means it is not possible to draw wide inferences about the value of personalised learning online from this data alone. However, the small size of the study enabled the collection of extremely rich data which has provided a glimpsed three dimensional view of what it might be like for students to be learning in this way. Many of the findings are supported by the artists projects (Stevenson 2002) and the writing projects described by Burns (2006). Data confirming student satisfaction with the online work with mentors is complemented by the *Ultraversity experience* (Powell, Tindal & Millwood, 2008), It is therefore reasonable to assume that additional studies in this area could yield useful evidence which can inform the development of 21<sup>st</sup> century pedagogies.

## Chapter 6

### Conclusion

#### 6.1 Summary of Findings

The key conclusion of this research is that students had the opportunity to thrive in a personalised, interactive learning environment where they could focus on individual goals and be supported by online mentors situated outside the school. Working within this environment, students reported significant degrees of satisfaction and self efficacy.

Inside this model of learning, teacher practice changed. No longer acting as the sole 'expert', the teacher became repositioned in the group as a learner. The change in teacher behaviour as the teacher worked collaboratively alongside expert mentors was matched by increased independence and self managed learning for students.

As students focused their inquiry past the level of curriculum goals and onto real world personal goals, several experienced a shift in perception concerning their own learning potential and expressed surprised at their own level of competence. The fact that eleven out of the twelve students were boys makes this shift in personal learning expectation worthy of further investigation in the quest for improving academic outcomes for boys.

All students involved in the project reported valuing the experience of working as a collegial group which included their teacher and mentors outside the school. They valued working collaboratively, learning from and with each other, and in this way, influencing and contributing to the construction of new knowledge and personal expertise. In Maori society, contribution and the importance of others in learning is related to an ideology which emphasises wholeness and connectedness with knowledge viewed as a group possession. The concept of *Ako* in Maori education ideology means both to teach and to learn and is the act of unified cooperation between learner and teacher in the same enterprise. The relationship between the findings of this research, where students reported high degrees of

satisfaction with the collaborative nature of the learning, and the concept of *Ako* suggests that some value may be found in further investigation of this model for Maori.

A difficulty which should be taken into consideration when establishing flexible learning models in schools is that in the majority of New Zealand secondary schools, the curriculum and assessment framework places a number of obstacles in the path of a focus on personal learning goals. Currently, it is almost impossible to recognise and acknowledge forms of knowledge which do not fit inside the existing curriculum and assessment structure. As a result, many young people are not valuing or having recognised their vast range of skills and talents which might otherwise be nurtured by educators and mentors.

Finally, this study may have relevance for the ways in which the Key Competencies are viewed in secondary schools. The study demonstrated that the emergence of competencies such as *self management* and *relating to others* was facilitated by changes in teacher behaviour and action. As authoritarian approaches were replaced by a collaborative model where independent learning with others was supported, learners began to exhibit the personal competencies described by the New Zealand Curriculum (2008). These competencies which include *Thinking, Using Language, Symbols and Texts, Managing self, Relating to others and Participating and Contributing* occurred as a natural consequence of a learning model which was shaped to fit the learner; a personalised approach to learning with support from online mentors.

## **6.2 Recommendations and Future Research**

This research was a small study of twelve students engaged in a personalised learning partnership with experts beyond the school. There are several areas in which further research could continue to build on the findings in this study. Some suggestions for future research are:

- Further study of boys' learning supported by mentors using Web 2.0 environments. This could include research into academic achievement as well as attitudes and satisfaction with the format.

- An investigation of the use of mentors and Web 2.0 tools for Maori learners drawing on the concept of *Ako* and co-construction of knowledge
- Curriculum specific research in areas such as English, Maths and Science to see if mentoring students in online environments can successfully complement and enhance the classroom work of these teachers.

*“We are at the beginning of a new era in human collective activity.  
This era is not marked by elimination of the value or unique functionality  
of face to face and place-bound interaction.  
Rather, it represents the growth of parallel and alternative  
forms of many types of human interaction and discourse.  
These parallel forms are not inherently better nor worse than pre-Net  
interaction and education.  
However, network-enhanced interaction better fills some human needs  
at certain points in time.”*

(Eastin & LaRose 2000)

## Postscript

The Ministry of Education e-fellowship provided a once in a lifetime opportunity for me, along with nine other educators, to work together, research and explore new frontiers of learning as a cohesive group. Many evenings spent together saw discussions around education ranging far into the night. The opportunity to spend weeks reading the emerging literature in our respective fields was compulsive and highly valued by all. The ten of us became close friends, travellers (literally) in strange lands as we presented our research at conferences in NZ and overseas and metaphorically as we attempted to forge new pathways through the tangled thicket of our sometimes resistant schools.

At the conclusion of the e-fellowship. I returned to the Art teaching, convinced that no matter what the curriculum area, learners in secondary schools could benefit significantly from being provided with flexible and open learning environments where there was the facility to include a range of advisors - staff, community members and subject experts. The advantages of students owning and managing their own learning within a culture of inquiry and collaboration had been well demonstrated by both the artist and sporting groups.

Consequently I set about supporting an Art Department culture where it was possible for all senior students to receive advice and coaching from all four department staff. Local artists were invited to become part of the art community and all students were engaged in a process of personal inquiry.. Artist mentors began to work, face to face, inside the classroom. They shared their own work and ran 'in house' practical workshops. Artist in Residence weeks were scheduled. Teachers were encouraged to produce personal work within the group. Everyone was viewed as a learner - accessing peers, experts and mentors in ways that enabled reflective, self-directed learning. Thinking skills, self management, discussion and critique were integral parts of the process.

Other aspects of the online work which had led to learner success were translated into the offline face to face classroom too. The work was deprivatised by setting up common studio space. This was achieved by a wall of the senior classroom

being covered with pin board and divided into student 'pages'; the wall resembled a huge web page. Students were able to 'post' thumbnail examples of their work and their thinking. In this way, all work was displayed, research being collaborative and shared. Learners and mentors posted comments on each others' work by using stickies. Everyone was encouraged to contribute ideas and resources for others.

A change of focus as to what indicates learning 'success' was also usefully translated from our online experiences to the face to face classroom. I had seen in the online work with mentors that when students chose goals for themselves, they were significantly higher than the goals which may have been expected by the teacher or by an NCEA achievement standard. Consequently the students, as part of a real life artist community were now 'going for gold' – getting past the idea of NCEA and instead looking at real world performance and excellence.

In 2006, retaining two senior painting classes, I extended my interest in coaching and collaboration in the role of Project Leader for an Extending High Standards Across Schools (EHSAS) group. The task became one of assisting 250 secondary and intermediate school teachers from five schools to collaborate and learn from and with each other.

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# Appendix 1

## Archived Chat from SportLink

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**View Archive: Jun 30, 2004 9:05:17 AM NZST**

**Sports Science:**

**Paul:** hey its Paul, thanks for the information that you gave me about snowboarding, it has been realy helpful to my training program. 30/06/2004 9:06:33

**Peter Mellow:** hi paul, u r welcome, have u been up the mountain this season yet? 30/06/2004 9:07:19

**Peter Mellow:** holidays coming up! 30/06/2004 9:07:31

**Peter Mellow:** do u do balance exercises?standind on one foot? 30/06/2004 9:08:04

**Peter Mellow:** Sorry my typing is so bad, using left hand only, still holding the baby 30/06/2004 9:08:45

**Paul:** na i havent been up yet but im going down south for ten days in the holidays to board so that should be good. dont worry about the typing mines just as bad 30/06/2004 9:09:05

**Peter Mellow:** do u stretch after a day on the mountain? 30/06/2004 9:09:30

**Peter Mellow:** had some NZ team skiers who swear by stretching in the lodge in front of the fire 30/06/2004 9:09:54

**Paul:** not usally 30/06/2004 9:10:06

**Peter Mellow:** try it this time 30/06/2004 9:10:13

**Peter Mellow:** di u take a heart rate montior down with you? 30/06/2004 9:10:23

**Peter Mellow:** I did some reserarch on HR during runs, so u can train at that heartrate when off the Mountain 30/06/2004 9:10:45

**Paul:** na i dont have one can u do it with yr pulse? 30/06/2004 9:10:47

**Peter Mellow:** just take your pulse when u hit the bottom of the mtn 30/06/2004 9:11:00

**Peter Mellow:** do it 3-4 times and you should know whta it hits on a run 30/06/2004 9:11:14

**Peter Mellow:** then try and train at that heart rate back at sea level 30/06/2004 9:11:27

**Peter Mellow:** specificity 30/06/2004 9:11:30

**Paul:** at the end of the day? or after each run? 30/06/2004 9:11:33

**Peter Mellow:** after each run, it should get higher as the day goes on due to fatigue 30/06/2004 9:11:47

**Peter Mellow:** average 2-3 runs 30/06/2004 9:11:53

**Peter Mellow:** also time how long each run takes, so you can do interval trainin at that heart rate for that time period 30/06/2004 9:12:12

**Paul:** ok sounds good, Ill give it a rty and get back to u 30/06/2004 9:12:14

**Peter Mellow:** energy system specific 30/06/2004 9:12:19

**Peter Mellow:** give it a goe and let me know what you find out 30/06/2004 9:12:28

**Peter Mellow:** skiers got their heart rates up to 170-180 30/06/2004 9:12:39

**Paul:** ok thanks for that i look fword to getting back to u after the holidays 30/06/2004 9:13:50

**Paul:** Tony would like to talk to u see ya 30/06/2004 9:14:32

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**Peter Mellow:** Hi Tony 30/06/2004 9:14:38

**Peter Mellow:** how is your trainin going? How is your study at school going????????? 30/06/2004 9:15:10

**Peter Mellow:** gotta keep that balance 30/06/2004 9:15:18

**Tony:** yeah thats true balance is important but hard to do for sure 30/06/2004 9:15:53

**Tony:** btw this is tony its nice to chat with you this site is a new experince for me. 30/06/2004 9:16:47

**Peter Mellow:** hang on clara is here! 30/06/2004 9:17:02

**Peter Mellow:** she is on the phone 30/06/2004 9:17:15

**Peter Mellow:** trying to get into room 30/06/2004 9:17:21

**Peter Mellow:** what time do u have 2 finish this session??? 30/06/2004 9:18:12

**Tony:** hello clara its adam its great to chat with you this chatl stuff is preatty crazy i hope its not to difficult for you so thank you for your time 30/06/2004 9:18:33

**Liz Stevenson:** session finishes at 9:35 pt 30/06/2004 9:18:58

**Peter Mellow:** she can't get in, i will get her on this afternoon tyo answer your questions 30/06/2004 9:19:03

**Tony:** ok that would be great thanks alot are we going to be able to get into this chat again this afternoon cause it would be helpful for the questions i think? 30/06/2004 9:20:10

**Peter Mellow:** yes, especially fi everyone an get on :- ) 30/06/2004 9:20:27

**Peter Mellow:** have to get it sorted! :- ) 30/06/2004 9:20:32

**Peter Mellow:** get a MAC! 30/06/2004 9:20:35

**Peter Mellow:** she will log in this afternon and answer the first lot of questiosn 30/06/2004 9:20:52

**Tony:** no worrrys thats fine yeah every1 wants to give this a go so yeah mite hafta get us sum MACS hahaha 30/06/2004 9:21:10

**Peter Mellow:** so let the gusy know that and they can check the answer tomorrow and post some more questions 30/06/2004 9:21:10

**Peter Mellow:** hehe 30/06/2004 9:21:22

**Peter Mellow:** I am archiving this chat so I will send you the transcript as a sample 30/06/2004 9:22:29

**Tony:** yeah that would be sweet i think weve certainly found the other transcripts realy helpfully with our studys 30/06/2004 9:22:41

**Tony:** ok sweet as 30/06/2004 9:22:52

**Peter Mellow:** good to hear, keep studying, the best sports people think "sport AND study!" 30/06/2004 9:23:08

**Peter Mellow:** all subject are important! 30/06/2004 9:23:23

**Peter Mellow:** subjects 30/06/2004 9:23:27

**Peter Mellow:**have a good holiday, but remember that you can check in here any time over the holidays (internet cafe?) and i will post some more photos and info 30/06/2004 9:24:03

**Tony:** true that true that. yeah no mata how gd @ sport u r u still needa study. doesnt mean I lyke it tho LOL 30/06/2004 9:24:05

**Tony:** yeah sure ill do my best to do dat cheerz 30/06/2004 9:24:28

**Peter Mellow:** with hard work, comes good results 30/06/2004 9:24:35

**Peter Mellow:** good to hear 30/06/2004 9:24:47

**Peter Mellow:** well done! :-) 30/06/2004 9:24:54

**Peter Mellow:** interesting, the chat has gone on longer than I set it for, so obviously as long as it is open it stays working 30/06/2004 9:25:57

**Peter Mellow:** so we can keep going, for the moment, baby is playing happy at the moment 30/06/2004 9:26:15

**Peter Mellow:** do you train as a class at times, or just in your individual sports? 30/06/2004 9:26:59

**Tony:** well in our class theres 6 ppl that play rugby so yeah were possible we train 2gether but often we cant because were doing different skills. 30/06/2004 9:28:07

**Peter Mellow:** how is your season going? 30/06/2004 9:29:06

**Tony:** gd as that will b 2 meke all aite 30/06/2004 9:29:10

**Peter Mellow:** "2 meke all aite"? sorry don't know that one 30/06/2004 9:29:56

**Tony:** yeah preaty all aite we just need to get more motavated as a team and we should win all our games nxt term 30/06/2004 9:29:57

**Peter Mellow:** do you do any specific sport psychology training, most people just do their own thing 30/06/2004 9:30:28

**Tony:** its maori for "too much" 30/06/2004 9:30:33

**Peter Mellow:** cc 30/06/2004 9:30:36

**Peter Mellow:** ok :-) 30/06/2004 9:30:40

**Peter Mellow:** trying to get many individuals to play together and work together is always a challenge,in work, and sport 30/06/2004 9:31:13

**Tony:** not really i dont really follow what you mean. but just chatting with our teacher who is our rugby coach he sed he chats with us players individully to motavate us. 30/06/2004 9:32:16

**Peter Mellow:** motivation is a hard one. root word = provide witha motive. what is your motive to play rugby? Be an all black, good, but the guy next to you may just want to have fun, so will you get the best out of them???? 30/06/2004 9:33:35

**Tony:** yeah thats been a problem in our team but weve had a team chat and every1s sed that we all have to work 2gether to win these games and for most of the players winning games is the motivation 30/06/2004 9:35:08

**Peter Mellow:** havea read of that motivation book over the holidays 30/06/2004 9:35:10

**Peter Mellow:** written by a NZ sports psychologist, ken Hodge from Otago Uni  
30/06/2004 9:35:35

**Tony:** ill do that thanks for dat 30/06/2004 9:35:38

**Peter Mellow:** you are welcome Adam 30/06/2004 9:36:21

**Tony:** awell the bell just went so i have to go to my next class ill chat 2mara  
thanx alot cu then :-) 30/06/2004 9:36:28

**Peter Mellow:** ok see you later, have a good day, well done getting this going!  
30/06/2004 9:36:54

**Peter Mellow:** chat later 30/06/2004 9:37:13

**Peter Mellow:** out 30/06/2004 9:37:35

[http://www.autonline.ac.nz/webapps/collab/archive/view\\_archive.jsp?course\\_id=1617\\_1&group\\_id=&archive\\_id=289\\_1](http://www.autonline.ac.nz/webapps/collab/archive/view_archive.jsp?course_id=1617_1&group_id=&archive_id=289_1)

## **Appendix 2**

### **Information Sheet for Participants**

#### **THE UNIVERSITY OF WAIKATO HUMAN RESEARCH ETHICS COMMITTEE**

#### **ONLINE GUESTS/MENTORS Project 2004 “How can e-mentoring make a difference in PE?”**

#### **Information Sheet**

Name of Researcher: Liz Stevenson

Supervisor: Nola Campbell

Contact Telephone Number:

Email: [lizst@paradise.net.nz](mailto:lizst@paradise.net.nz)

This project is about online mentoring (or e-mentoring) used in a supporting role alongside face to face classroom teaching. This will be investigated by engaging senior Physical Education students, at Trident High School, who are completing NCEA Level 3 qualifications, in online discussion with expert sports mentors at Auckland University of Technology for the purpose of personal coaching and academic support. The study will examine the effect that e-mentoring has on student learning and performance.

Participants will be required to do the following:

1. Take part in the eight week online mentoring project using the website, SportLink.
2. Complete an online interview with the researcher at the end of the project

It is expected that the major outcomes of the research will support and enhance future online learning and performance within sports mentoring systems. The research is part of my thesis for MEd at the University of Waikato.

All information collected in the form of interview material will be destroyed at the conclusion of the project. Participants are guaranteed anonymity unless they give written permission for their names and/or photos to be used.

Participants have the right to:

Refuse to answer any particular question and to withdraw from the study at any time.

Ask any questions about the project at any time

Be given access to a summary of the findings when the study is concluded

Withdraw from the project at any time before the final draft.

**Appendix 3**  
**Consent Form for Participants**

**THE UNIVERSITY OF WAIKATO**  
**HUMAN RESEARCH ETHICS COMMITTEE**

**ONLINE GUESTS/MENTORS Project 2004**  
**“How can e-mentoring make a difference in PE?”**

**Consent Form**

I have read the information sheet for this study and have had the details of the project explained to me. I understand that I am able to ask questions at any time. I am aware of the fact that I am able to withdraw from the study at any time and can decline to answer any of the interview questions.

With the knowledge that my participation will be anonymous unless I give written permission for my name and/or photo to be used, I agree to take part in the project under the conditions explained in the information sheet.

Signed: .....

Name: .....

Date: .....

# Appendix 4

## Multi-frame Image for Online Coaching

