

Action Research

The effect for Māori students of meaningful engagement in learning using ICTs.

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e-Fellow 2006



Acknowledgements

Firstly I would like to acknowledge the New Zealand Ministry of Education for granting me an e-Fellowship that has provided the time and resources necessary to pursue this e-learning action research.

To Dr. Michael Winter and the CORE Education team, thank you for all of your support over the year. It has been invaluable.

I would also like to thank my principal Murray McDonald, the Board of Trustees and wonderful colleagues for their support and encouragement and many hours of conversations based in and around improving student learning outcomes. I would like to especially acknowledge Marama Ager, our bilingual class teacher and all of the students who were part of this research. Thank you for welcoming me into your class. I have been humbled by this experience. I have learnt a great deal and have been reminded of the richness that diversity brings to our lives.

My sincere thanks also to my supervisor at Curtin, Professor Darrell Fisher who guided and encouraged me wherever he happened to be in the world at the time. Thank you also to Garry Leet, SITECH Systems for your technical assistance and support.

Lastly and most importantly of all to Mark, my husband, best friend and chef extraordinaire. Thank you for keeping my meandering at bay, being genuinely interested and supporting me every step of the way.

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Abstract

If there is to be increased participation and success by Māori in education it is important that mainstream teachers acknowledge and cater for diversity in their classrooms. Although progress has been made in areas of Māori achievement, Ministry of Education reports indicate that work still needs to be done to improve Māori participation and achievement. Proposed changes to the New Zealand Curriculum express beliefs that guide and inform practice. According to the cultural heritage principle in The New Zealand Curriculum - Draft for Consultation 2006 “All students experience a curriculum that reflects New Zealand’s bicultural heritage and its multicultural society. Students who identify as Māori have the opportunity to experience a curriculum that reflects and values te ao Māori.” *

This action research explores the effects of creating opportunities for Māori students in one bilingual class operating each afternoon to create and share digital resources with their mainstream teachers and classmates. It examines cultural connectiveness, elements of best practice, engagement indicators that inform teaching decisions, and how Information and Communication Technologies can be used to share learning journeys and cultural experiences. This inquiry stems from my reflections as a team leader focused on improving learning outcomes for all students in our team.

Introduction

Context and Problem

I am a primary teacher with 20 years experience and am currently senior teacher of the Year 4 team at a large urban primary school. I teach in a digitally enhanced classroom and have key responsibilities for the Year 4 team, Information and Communications Technologies Professional Development and design and maintenance of the school website. In 2005 there were a relatively small number of Māori students in our team and

*Māori terms are listed in the glossary (page 40)

many of those students were actively and enthusiastically involved in Kapa Haka (Māori performing arts) and Te Reo Māori (Māori language) classes. We had noticed that a number of Māori students were showing less enthusiasm for learning once they were back in their own classes. This was an area of concern to our teaching team and, as senior teacher, I felt that I needed to investigate this further. This year I have had an opportunity, through an e-fellowship awarded by the Ministry of Education, to be released from classroom duties to pursue this investigation.

Key conclusions from the Māori Student Achievement in Mainstream Schools Report (Education Review Office, June 2004) found that although there had been improvements since the previous report in 2002, schools still had further progress to make to address issues of Māori underachievement in mainstream schools. I suspected that the concept of authentic learning for Māori students and the interpersonal relationships between Māori students and their teachers play an important role in improving outcomes for Māori.

My action research inquiry has been based on my desire to find ways that would improve the balance of engagement and enthusiasm for learning for Māori students once they were back in their mainstream classes. It also provided an opportunity for Māori students to share te reo Māori (Māori language) and Tikanga (Māori culture) with their mainstream classmates.

Research questions

The main aim of this action research has been to focus on improving my own teaching practice by investigating effective methods in which I can use ICTs in authentic contexts to improve the level of meaningful engagement in learning for Māori students.

Main research question: What are the effects for Māori students of meaningful engagement in learning using ICTs?

In order to find answers to this question I first need to explore the following:

- What elements of best practice allow me to cater to diversity in my classroom?

- What is meaningful engagement?
- How do ICTs facilitate meaningful engagement?

Theoretical Perspectives that informed my study

I needed to ask myself what is it that we are not doing that is causing a degree of disengagement in learning in our mainstream classes for some Māori students. As a mainstream teacher of Māori students and a team leader, I have been on a quest to find ways to cater better for diversity in my classroom. Delving into the literature has given me both an historic and a contemporary view about Māori education and has guided me towards and then through my action research.

There are five areas that have aided me in positioning my study; and these will be discussed in this section of my research report;

1. Background of Māori education
2. Tikanga Māori
3. Teaching theory and action research
4. Project based learning using ICTs
5. Engagement indicators

Background of Māori education

History is a funny thing. It all depends on who is telling the story as to the view that is extended to the world. If Renwick's view of James Henry Pope, the creator of Native Schools, teacher, school inspector, educationalist and writer is to be believed, these schools benefited Māori students immensely. Renwick (1993) states that, "Under James Pope's stewardship teaching in the native schools gradually became systematic and efficient. Pupils were classified according to standards of achievement and examined annually." Nothing in his report indicated the beatings that occurred when Māori was spoken in schools and the impact that still has several generations later (Selby, 1999).

As time marched on, a sprinkling of visionary educators walked our lands and introduced key concepts of getting to know the child and of building on the body of knowledge

embedded in the child's culture to lead to meaningful learning experiences. Silvia Ashton-Warner did not see failing students, she saw only a failing system and decided to do something about it. She listened to the students, to their culture and used the connections she made with her students to tap into their talents and develop pathways to success (Ashton-Warner, 1966). Warner looked inward to make changes that would positively impact her students.

In recent years, we too have been challenged to stop using a deficit approach to teaching and to look more closely inward. *Te Kōtahitanga: The experiences of Year 9 and 10 Māori students in mainstream classrooms* (Bishop, Berryman, Tiakiwai, & Richardson, 2003) challenges educators to look at building closer personal relationships with our students, just as Ashton-Warner had done decades before. For non-Māori teachers this means taking part in quality professional development where opportunities to experience aspects and dimensions of tikanga Māori (Māori culture) are provided (Group Māori, 2005). It also means having high expectations of Māori students. Back in 1948, Robert Merton described self-fulfilling prophecy, which later came to be known as the Pygmalion effect. What you expect in a person, you are likely to see (*Rosenthal and Jacobson publish Pygmalion in the Classroom*, 1968). I believe that this is as true today as when it was first introduced to the sociological debate in 1948. As Bishop et al discussed, we must have high expectations of all students.

When Durie presented key issues that impact Māori education at The Hui Taumata Matauranga: Māori Education Summit in 2001, he suggested that education should be able to make significant contribution to the three goals he was presenting, which are to;

- 1) Live as Māori
- 2) To actively participate as citizens of the world
- 3) To enjoy good health and a high standard of living

Underpinning those goals were three principles;

- a) Best outcomes and zero tolerance of failure
- b) Integrated action

c) Indigeneity (Durie, 2001).

These were to be achieved through three pathways; Māori centred pathway, a Māori added pathway and a collaborative pathway. In our school, we have Māori added pathways. In our case this means that students who identify as Māori and any other students interested in learning more about te ao Māori (The Māori world) have the opportunity to attend bilingual afternoon classes or to take part in regular Māori culture classes once a week. There is also an integrated Te Reo Māori programme that is used at all levels in the school in all mainstream classes.

The challenge for me has been to examine elements of teaching practice that are impacting positively on Māori students through the Māori added education dimensions in our school and to weave these into my own practice.

Tikanga Māori

Many schools in New Zealand have seen the positive effects of implementing a values programme into their schools. In recent years, commercially available programmes and support material for the teaching of values such as the Cornerstone Programme (Heenan, 2004) have been available. Values such as honesty and truthfulness, kindness, consideration and concern for others, compassion, obedience, responsibility, respect and duty are implemented to a certain extent in many schools. The effectiveness of such programmes has been explored by Thompson (2006) in a report commissioned by the New Zealand Principals' Federation. "Most of the principals we interviewed see ways of linking other developments in school, such as thinking programmes, student management programmes and community programmes to the school's values. They draw in a breadth of material gleaned from their reading to give their values programmes freshness and currency."

However, I find it interesting that nowhere in the report is acknowledgement of tikanga Māori made. Hirini Moko Mead's book introducing and explaining aspects of tikanga Māori (Mead, 2003) allows the reader to come to learn the correct Māori way of doing

things. In my opinion, the values that Mead shares in his book are as relevant to my classroom teaching as other values programme currently available. After reflection of the values presented by Meads and following discussions with cultural advisors in my school community, the following values (and my interpretation of them in for the classroom) began to underpin my actions as my action research progressed.

Whanaungatanga, – An awareness of the importance of whakapapa (genealogy) in the lives of Māori students and a focus on developing effective relationships. What do we, as a class group, expect of each individual member and in turn what support and nurturing can each member expect from the class group?

Manaakitanga and whanaungatanga– What characteristics do we want as a class or group to become identified with? For individuals within my class this means helping students conceptualize what type of person they aspire to be? How must we think and act to help us attain these goals?

Mana – I need to have an awareness of existing social mana of the Māori students in my class (Mead, 2003), “People of mana draw their prestige and power from their ancestors.” (p. 29). My understanding is that mana can also be earned. In my classroom I need to encourage students to identify, acknowledge and build on situations where mana is gained by what they do within the class group e.g. achievements in all areas, ability to help others succeed etc.

Tapu – As a classroom teacher I need to have a clear awareness of the tapu concerning elements related to school life. How many of us are aware and careful not to offend Asian students by using beckoning gestures and yet don’t realise the importance of avoiding passing anything over the heads of Māori students? I know that I have done this many times in the past and have been totally unaware of how this may impact Māori students. There are many other situations that I need to be aware of concerning tapu and this will take further learning, talking to cultural experts within and outside our school and sharing this awareness with all students in the class.

Noa and ea In my class I see this value as ensuring that balance is restored after times of unrest, conflict or unhappiness. That all members of our classroom group, including myself have resolved any concerns and that we are ready to move forward together.

Macfarlane's *Kia Hiwa ra! Listen to the culture –Māori students' pleas to educators*, is a rich value laden resource of strategies for teachers in diverse classrooms (MacFarlane, 2004). The values presented in this book differ slightly from the above list I have used from Mead's book and include ihi, assertiveness and Kōtahitanga- that of unity and bonding. Macfarlane includes several "Consider this" sections where suggestions to build positive strategies and positive classroom climates are presented.

Although I have much to learn about Māori values, these have given me a start and have impacted on the way in which I have conducted myself with the students I have worked with during my action research.

Action research and teaching theory

The premise of my research has been to work with groups of students to produce their interpretations of Matariki - the Māori New Year, which were then presented by the students to their mainstream classes as a digital resource. The research method chosen needed to allow for me to teach, gather data, reflect and make changes and then to be able to carry on teaching. The four basic themes of action research as explained by Masters (2000) are; "empowerment of participants; collaboration through participation; acquisition of knowledge; and social change" (*The history of action research*, <http://www2.fhs.usyd.edu.au/arow/arer/003.htm>). The action research cycle has also allowed me to focus on best practice by improving peer effectiveness through reciprocal teaching, collaborative reasoning, fostering a community of learners, and computer supported intentional learning environments (Alton-Lee, 2003). If a contextual approach to research plays an important role in bridging the gap between theory and practice (Ryba & Brown, 1994) it is vital for me to first look at the theories that lie at the very foundation of my teaching practice.

For many years I have considered myself a constructivist teacher, however as I strived to put the learner more squarely at the centre of my practice I became aware that something more perhaps is evolving. Richardson's discussion paper on constructivist pedagogy challenges us to focus more on student learning as well as examining cultural responsiveness (Richardson, 2003). The world for both teachers and students has changed markedly since I began teaching 23 years ago. Advancement in available technology has been a big part of those changes. However, the important aspect for me has been to focus on how technology can enhance teaching and students' learning (Rivero, 2006). My interest and commitment to e-learning led me to examine learning from the social constructivist viewpoint where learning is viewed as a social process (Beaumie, 2001). Social constructivism seems to have been a solid bridge that, recently, has guided me to another view on learning, that of connectivism. Connectivism, where students begin to see connections between learning contexts, ideas, and concepts is a fundamental skill (Siemens, 2004) and where chaos sometimes seems to be the norm in our digital age is a theory that sits well with my own pedagogy. Connectivism provides some degree of insight into the learning skills and tasks needed for learners to prosper in this digital age. How our students are able to learn what they need in the future is more important than any knowledge they gain and retain today. This led me to ensure that learning experiences during this action research involved opportunities to problem solve with the technologies available and to create opportunities for collaboration and critical reflection.

Project based learning using ICTs

Although the general theme of Matariki had been pre-set for the students, all other decisions on the production of their digital story was theirs to make together. Vygotsky's notions of the power of socially constructed meaning (Vermette, Harper, & DiMillo, 2004) is no more evident than when students working collaboratively lose all track of time and are in what Csikszentmihalyi (2002) describes as in "the flow". Project based learning provides an ideal opportunity for this to take place. With the students ranging in age from seven to ten years of age, there was a wide range of skills and pre-knowledge

about Matariki. Any age concerns that I had were quickly dismissed as peer tutoring and mentoring became a natural part of their project sessions.

Some of the technology available posed quite a challenge. A number of the students had never come across some of the technology before, such as the Digital Blue Movie Maker. With little instruction and the chance to explore, students soon began having what Papert (2002) describes as “hard fun”. The kind of learning that has students rushing home to share with their family what they have done and then cannot sleep because of the possibilities they begin to imagine. They become challenged, intensely engaged and involved.

Meaningful engagement indicators

So what is it that, as a teacher, I can look for as indicators of meaningful engagement? According to the Education Review Office’s 2003 *Evaluation Indicators for Education Reviews in Schools* I need to be gathering data on student morale and perception, student involvement in decision-making, observed student relationships and behaviour, rates of absenteeism and truancy and rates of stand-down, suspension and exclusion (*Evaluation Indicators for Education Reviews in Schools*, 2003)

In considering raising engagement levels of Māori students specifically, the report recommends the following approaches;

- form positive teaching relationships with Māori students;
- form collaborative relationships with whānau, hapū, iwi and Māori communities;
- make meaningful connections between the curriculum content and the wide range of life experiences of Māori students;
- draw on a wide range of pedagogical approaches; and
- develop positive learning environments that value diversity and inclusion.

As an experienced teacher, the above advice seems sound and well balanced. So what would I expect to see in my classroom to indicate that my students are meaningfully engaged? Students would be on-task for sustained periods of time. There would be a positive tone and students would be involved in challenging self selected activities. The students would be enthusiastic, optimistic, curious and interested Chapman (2003). In my

experience these indicators of meaningful engagement also sit well. Students would be involved in decision making. They would be asking questions, sharing ideas and would probably show interest in feedback and feed forward. As this action research progressed I modified and refined the engagement indicators to four;

- Student is actively involved in decision making opportunities
- Student asks questions during the learning process:
- Student discusses or demonstrates own ideas and expands on them:
- Student demonstrates interest in self/peer/teacher assessment and feedback.

(The indications, rationale and possible evidence are included as a table in Appendix 1)

In examining Māori education from an historic and a contemporary view, I have discovered key elements that I need to be aware of in my own practice if I am to cater for diversity in my programme. Underpinning these elements of teaching practice is now a greater awareness of the part that traditional Māori values can play in aiming for cultural connections. Through the process of examining learning theories, I have discovered that I have had a slight shift towards a viewpoint of connectivism which has positioned my action research and led me to explore project-based learning using ICTs. Project-based learning, I have found, allows for a positive learning climate where effective teaching practice and opportunities for values to be acknowledged help to create an ideal situation for collaborative learning.

Methodological Framework

In clarifying my own epistemological assumptions I find that I favour a more subjective approach as described by Cohen, Manion and Morrison's (2000) in that I "view the social world as being much softer, personal and humanly created kind." (p.6)

With this in mind, my research took the form of practical action research where I worked with the newly formed bilingual class which operates Monday to Thursday afternoon. The 24 students (11 female and 13 male) in this class are drawn from the Year 4, 5 and 6 classes. During Terms 2 and 3, I worked with groups of children from this class during their inquiry based on Matariki - The Māori New Year. This took the form of working

with the class alongside their teacher and then later working with groups of children for approximately eighty minute lessons, 3-4 times over the week in project-based learning. During this time students created a digital story that was later compiled on a CD-ROM. The intention of the digital resource was to help inform their mainstream classmates and teachers about the significance of Matariki. During Term 3, students had the opportunity to present the Matariki CD-ROM to their mainstream classes.

Of the twenty-four students that I worked with, there were four students whose parents or caregivers did not give permission for them to be included in this action research. As I was working with the entire bilingual class as part of their inquiry learning all students were included in all teaching and learning activities. However students who did not have permission to be included in this action research were not included in any surveys, photographs or video segments. Throughout this report students were assigned pseudonyms to protect their identity.

Standards:

The standards that I have used to shape and evaluate both my research and my research report are those of trustworthiness and authenticity as described by Guba and Lincoln (1989, Chapter 8). I have chosen to focus on authenticity standards as they relate clearly to interpretive research and the characteristics of action research as discussed by Cohen, Manion & Morrison's (2000) which is the methodology that have used in my research project. I will also be discussing the parameters of my report in terms of the guidelines offered by Bullough and Pinnegar (2001).

Trustworthiness: I have needed to ensure that my research contained a number of accounts of experiences involved in the action research so that internal reliability criteria are met and that these accounts are accurately documented. This was mostly in the form of the comprehensive reflective journal mentioned earlier. As the scope of my research was limited, it did not allow for generalisations to be made. However, in this report, I am aiming to provide enough detail and rich narrative so that the reader may make connections with their own situation. It has been vital for me to maintain records that are

accurate and open to scrutiny by those interested in my research. Procedures for ensuring dependability were carefully thought out in advance of the research commencing.

Authenticity: Each person involved was considered a stakeholder and careful planning was done to ensure that their understanding of all of the processes involved was taken into account. Anderson and Arsenault (1998), when explaining the validity of qualitative research, discuss audit trails and chain-of-evidence and speak of the need to keep “meticulous records of all sources of information used, using detailed transcripts, and taking field notes of all communications and reflective thinking activities during the research process” (p.134). All raw data, including audio and visual recordings and observations have been carefully archived. An important facet of my work has been checking that my interpretations of the data are a true and fair account. To this end I have involved all stakeholders in the constant use of a member-check process to ensure that any conclusions and summaries have honoured their values and beliefs. During the course of my action research I have been mindful of my responsibilities of providing learning experiences that promote a deeper cultural understanding. Although I am of Māori descent, my own experience with Te Reo Māori and Māori culture is limited. To that extent it has been necessary for me to take advice from cultural experts within our own staff and the wider community. In this class there was a range of ages from seven to ten years and although most students identify as Māori, there was also variation in cultural backgrounds and experiences.

The majority of the students chose the groups that they worked in and each group had autonomy as to how they created their digital stories. I needed to ensure that each group was presented with the different ideas and methods of the other groups and found it prudent to encourage the older students to be tolerant and accepting of the ideas and work produced by the younger students. As the participants of this research included students and their mainstream classroom teachers, I needed to ensure that I carefully built into my research opportunities for each group to understand the viewpoint of the other.

There was variation within the groups with regard to the conceptual interpretations about Matariki and this needed to be acknowledged and accepted. When this was the case, it was important for me to document this to help the students acknowledge that others’ constructs might differ from their own and that the final product did not need to be the same for each group.

This action research involved providing learning experiences to enhance students’ understanding of Matariki – the Māori New Year and its significance in both historic and contemporary settings. It developed from there into a case that was put forward by the bilingual class to hold a celebratory assembly and to acknowledge Matariki as an important event within our school. Through our English as a Second Language (ESOL) teacher, the Chinese school community invites us each year to join the Chinese New Year celebrations and all classes are also exposed to Diwali (Indian lights festival). It is hoped that, following the inaugural Matariki Celebration, this will become an annual event.

The following chart shows the stages in my study and indicates how legitimation and representation has been maintained.

Reflective journal and action research cycle documentation kept throughout the action research.	<u>Term 1:</u> 1. Identification of issue & formulation of research questions 2. Identify target population for action research 3. Approach principal, teachers and students to obtain consent.	Discuss each step with senior management team to clarify issues and ensure that research “fits” with our school vision. Other people involved – Supervisors, senior school management team, students and their whānau (family).
	<u>Term 2:</u> 4. Meet with parents at school Whānau (family) meeting. 5. Co-plan with teaching team. 6. Initial teaching session with whole class.	Ensure that all participant groups are well informed about the reasons for and steps of the research. Allow and encourage on-going questioning. Other people involved – Whānau, bilingual class teachers and students.

	<p>Term 3: 7. Work with one group for entire week – Creation of digital story</p> <p>8. Working with class – documenting group learning journeys.</p> <p>9. Facilitate production of Matariki The Māori new Year) CDRom</p>	<p>On-going data collection, observations etc. Documentation of learning journeys. On-going sharing and discussion of my interpretations with group members noting suggestions and responses. Other people involved – Bilingual class teachers and students.</p>
	<p>Term 4: 10. Coordinating opportunities to share the resource.</p> <p>11. Reflect and analyse overall outcome/s</p> <p>12. Make clear links to between intervention and student outcomes.</p>	<p>Close liaison with all groups to ensure sharing and shared interpretation of any social actions and outcomes. Student outcomes shared, discussed and documented with all parties concerned. Other people involved – Supervisors, senior school management team, bilingual and mainstream teachers and students and whānau.</p>
	<p>13. Link findings back to literature</p> <p>14. Draft report to present to participants</p> <p>15. Prepare final report.</p>	<p>Present draft report to all stakeholders and allow for written and verbal feedback. Take these into consideration for final report. Other people involved – Supervisors, senior school management team, bilingual and mainstream teachers and students and whānau.</p>

Limitations of my study

The very nature of action research is emergent and responsive (Dick, 2000) and so all actions that I took during this action research were in response to observation and reflection of my own teaching practice. Therefore the duplication of the exact teaching

practices and outcomes of this particular action research would be impractical and would need to be adjusted to the needs of the individual students involved.

As I mentioned earlier in this report (page 11), the scope of my research is limited and does not allow for generalisations to be made. This study involves twenty bilingual students from a class of twenty-four. The restricted number of participants in this study means that any patterns or themes emerging from the data can not be seen to represent a wider population.

Ethical issues

The age of the participants, cultural considerations and confidentiality were the three main ethical concerns with this study. I needed to carefully word the consent letters to ensure that all participants involved in this study were aware of my identity and background. I had the chance to speak to the parents of the bilingual class at an information evening early in the year about the purpose of my research and to answer any questions. The consent letters clearly state that all participants could withdraw from the research at any time. As the main participants were students aged seven to ten years old, I sought advice from my academic mentor at CORE Education, Dr. Michael Winter, on the wording of the letters to the parents involved. Confidentiality was also addressed in the letters. The concern of perceived authority and/or feelings of disempowerment needed to have been carefully considered. Key members of the senior management team and the teachers involved in the bilingual class were consulted to ensure that any issue regarding authority and disempowerment was minimised. One of my main concerns at the beginning of my research was how to deal tactfully with key findings if these might cause any form of embarrassment or discomfort to participants. Although this has not been an issue, I have been mindful that my interpretation of any findings, as explained earlier, were discussed fully with participants.

Data gathering

The data was gathered using a variety of methods including three student questionnaires, group and individual discussions with students, conversations with teachers, general

observations, videoed snippets of incidental learning and a comprehensive reflective diary. I worked collaboratively with the teacher involved in the bilingual class to ensure that the achievement objectives and learning outcomes fitted with the inquiry that was taking place and that the data gathered provided a framework for classroom assessment. I am aware that the very nature of action research means that the data that I have collected is subjective, especially my reflective diary and is limited in scope. However, I have kept an open dialogue with colleagues and the students that I have been working with to discuss my interpretations of observations and phenomena as they have arisen.

There were six cycles during this action research. Each group that I worked with formed the basis for one cycle. Three main areas were focused on in each cycle;

- Reflecting on teaching and learning.
 - Student learning outcomes identified
 - From reflections, best ways to achieve these outcomes
 - Phenomena/observations of interest
- Indicators for meaningful engagement.
 - Indicators identified
 - Observations for each indicator
 - Related data documented for reference
- General thoughts / Planning and development ideas for next teaching and learning.
 - General observations / Patterns or trends emerging documented / Needs identified for further investigation

Following the six cycles, documented in the reflective journal were;

1. The process of the digital resource production and
2. The process and outcomes of the students sharing the resource with their mainstream classmates and teachers.

Organising the data for analysis

Students were assigned pseudonyms for the printed reflective diary and were coded for the three surveys. The data collected was organised and sorted into categories. These are as follows.

1. Reflective diary

- a. Comprehensive diary (45 page) account of day to day events
- b. Reflection about learning and teaching
 - i. Elements of best practice for student learning outcomes
 - ii. Reflections about meaningful indicators
 - iii. Observations of how ICTs facilitate meaningful engagement

2. Preliminary survey. Categories -

- a. Current level (at time of survey) of communication by bilingual students re Māori added education pathways with mainstream class and teacher and perceived level of interest from mainstream class and teacher in work done during bilingual class
- b. Preferred level of communication by bilingual students re Māori added education with mainstream class and teacher
- c. Confidence level in the use of presentation technologies
- d. Level of willingness to offer help to mainstream classmates with any type of ICT

3. Digital story self-evaluation. Categories -

- a. Student's thoughts about collaborative learning
- b. Thoughts about involvement in planning and decision making in own learning
- c. Number of students that felt able to explain and expand on their own ideas while working together
- d. Willingness to ask for help
- e. Level of willingness to offer help to mainstream classmates with creation of digital stories
- f. Level of interest in peer and teacher feedback on their digital stories

- g. Number of students who could/would use the programs used at school in their own home

4. *Sharing of the Matariki Digital Resource. Categories -*

- a. General feelings prior to presenting to class
- b. General feelings of the students as they were presenting the digital stories.
- c. Mainstream classmates and teachers reaction/s to digital stories
- d. Level of confidence in students to share the resource to other groups.
- e. Level of willingness to offer help to mainstream classmates with any type of ICT.

5. *Action research cycle reflections*

- a. From reflection of teaching and learning, further ideas were developed and recorded to help students achieve student learning outcomes in the areas of English (Oral language), Essential skills (Communication, Information skills, Self management and competitive and Social and cooperative.
 - i. Phenomena / observations of interest
- b. Meaningful engagement indicators.
 - i. Observation/s and thoughts related to the meaningful indicators
 - ii. Source of data identified for future reference
- c. General thoughts / Planning and development ideas for next cycle.

6. *Staff discussions. Categories -*

- a. Teacher's attitude towards Māori added pathways at school
- b. Own experience & knowledge of Te Reo Māori and Tikanga Māori
- c. Student's general performance (academic and social) in mainstream class
(For the students that I worked with in that particular teacher's classroom)

Analysis procedures

The content of the reflective journal, video footage, still images and informal discussion with colleagues formed the basis for reflection on the action research cycles. This then provided direction for change which was documented, described, interpreted, discussed and analysed. Teaching then took place and the cycle was continued.

Responses for each survey were documented for each student. Patterns of responses and emerging themes were noted and discussed. The results of survey questions have been graphed and have been included in the appendices.

Discussions with staff allowed me an insight into my colleagues' attitudes, experiences and knowledge of te ao Māori (The Māori world). For those who did have bilingual class students I was also able to discuss the students' general performance.

Findings and implications for my teaching practice

Preliminary survey (Appendix 2):

This survey was completed by each student before they began their work on their project based learning task. Although all of the students would like to either sometimes or often share with their mainstream teacher and classmates what they do in their bilingual studies, 14 of students have never been asked to share and only six reported being asked occasionally. Confidence levels in using a variety of technologies was relatively low with only four of the students stating that they felt confident to use ICTs in their learning or as a presentation tool. No student stated that they would be confident to offer help to their mainstream teacher or classmates.

Although I was gathering general baseline data about confidence and use of ICTs, more importantly was my inquiry into the opportunities that our bilingual students had been given to share aspects of their learning experiences in the bilingual class with their mainstream teachers and classmates. Immediately these results took on great importance to me as a classroom teacher as well as in my role as team leader. Only six students reported being invited to share bilingual class learning experiences with their mainstream teacher or class. Of the 20 students involved in this research, all were keen to share what they do either sometimes or often. To ensure that our students, who identify as Māori, feel that te ao Māori (the Māori world) is valued, then we must, at the very least, show interest in the students' Māori added education pathway choices such as their bilingual studies.

Digital Story. Self evaluation sheet results (Appendix 3)

All students enjoyed working in groups. As a classroom teacher I need to ensure that the opportunity to work collaboratively exists in all learning experiences, especially project-based learning.

Although I assumed that all students had been active participants in decision making opportunities, two of the students reported that they had not. I need to be more vigilant in checking that every student feels that they are empowered to help make decisions.

Planning their own learning journey was a positive experience for 18 of students with one student giving a neutral response and one student not responding. In my experience, when students feel positive about the direction of their learning they are more likely to be committed and engaged. I need to build in opportunity for students' involvement in learning experiences and document this so that reflective practices can take place.

Although only two students reported asking me questions six students felt confident to ask their peers. It is important that there is constant opportunity for dialogue when students are working. In this case, if they were not encouraged to be talking with each other, one-third of the students may have been left unsure or frustrated with what was happening and/or what they needed to do. Eighteen students felt that they had the chance to share their ideas. As I discovered during the course of this action research, there is much I do not know about the students and it is a reminder to me that to know a student is to be aware of their needs so in the interest of encouraging all students to share their thoughts and ideas and to achieve to their highest possible levels we, as teachers must learn as much about our students as we can.

Except for the one student who did not reply, all other students were keen to get feedback from others about their work. Decision making and planning seem to be keys that lead to showing an interest in feedback. Although this has been the most difficult engagement indicator, it is still a worthwhile element for me to consider in my teaching practice.

Students need an audience for their work and when it is in a meaningful context such as this, it makes it all the more worthwhile.

At this stage only 13 students could think of ways to use the ICT programs at home. I need to spend more time discussing links between what they do at school and possibilities for transferring those ideas and skills to home. I also need to create more opportunities for the students to discuss and share with whānau the kinds of learning activities they are involved with; and create opportunities to transfer those experiences into the school context. Students had the opportunity to make comments along with their responses. Following is a sample of the comments that helped me to reflect on my practice.

On working on the project-based exercise:

“Interested by how much talent I never knew I had. Especially liked how I had the great talent of directing things.” - Olivia

On decision making:

“Yes, I went home and overnight I thought about things to do.” – Tipene

On taking part in planning:

“It was really cool planning it out because I learnt about some stuff that I never knew before and I was able to share my ideas with my group.” - Libby

On sharing ideas in the group:

“I did get chances to explain what my ideas were. I also enjoyed the other one’s ideas. I felt that I wasn’t left out at all. I was proud of myself.” - Shantelle

On sharing CD-ROM with class:

“I am really nervous because if they don’t like it I am going to be shy.” - Gemma

Using the programs at home:

“We could use it to make slide shows for special moments in life.” - Gemma

Sharing the resource with their mainstream teacher and classmates (Appendix 4)

While the majority of students (19) reported feeling shy or nervous before and during the sharing process, nineteen of the students reported positive responses from the viewers. Once they had shared it with their class I asked how they would feel about sharing it with other groups. All students were positive about the idea. The change in the levels of confidence was almost palpable. Not only that but all students now feel confident to help others who might be interested in making their own digital stories. In the preliminary survey no student felt confident to offer any help to their classmates or teachers.

The comments from the audiences that were reported to me were generally requests to show them how certain elements of the digital story were done. This process of sharing has had a number of positive impacts on the bilingual students already. It has raised their confidence levels, increased their ICT skills, raised the students' profile in their mainstream classes and has given the students an awareness of the importance of Matariki in the lives of many Māori.

Reflective diary (An excerpt of this has been included as Appendix 5):

What started off as a means to enable me to simply remember what I'd done grew to a document that followed a personal journey of discovery. My only regret with the diary is that it starts when I began working with each group rather than the day I began working alongside the class and their teacher. Had I started it then I would have documented the impact I observed of creating a learning environment where Māori values played an integral part. I would have also written of the enjoyment and enthusiasm the students showed each day as the Matariki inquiry gathered momentum. This reminded me of the importance of choosing authentic learning contexts. I have condensed the several thousand word document into six short narratives for the purpose of giving the reader an overview of how each of the groups produced their digital stories about Matariki with the intention of sharing them with their mainstream classmates and teachers.

Group 1: The reality of not having a “Classroom environment” hit me on the first day. We were crammed into a two metre square in the centre of a classroom designated as an

area for anything spare that might one day be used. However, in a large, busy school, it was good to have some space where we could work together which happened to be just across the deck from the bilingual class.

After talking briefly with the students, I got them to fill out the preliminary survey. There was no time to see or discuss how they had responded until that evening. The results floored me. Already I had enough data to change my practice if their responses were anything to go on. It appeared that little interest was shown by the student's mainstream teachers or classmates about what they did during their bilingual studies and this certainly did not mesh with the student's hopes. I felt tinges of guilt as I tried to remember if I was consistent in showing interest in my students' Māori added pathways. I was hoping that the results were not indicative of the rest of the class. Unfortunately they were.

This group decided to create a presentation that used a combination of hand-drawn and computer art. The themes that each of them chose were selected from aspects about Matariki that interested them. One of the students was unsure about doing any art as he had very little confidence in his own abilities. Other group members persuaded him to give it a go and he worked hard to create a detailed picture of a waka cutting through the sea on a pitch black star filled night with the Matariki cluster to guide them. He scanned it on to Paint to complete it. Although I thought it was really quite something and so did the other group members, it wasn't until he watched his class-mates' reaction to viewing their digital presentation and listened to their "wows" that a shy smile appeared on his face. Throughout the week they progressed well, though at a frantic pace to get it all completed.

The one element of the digital stories that I was asking of each group was that they present their mihi (greeting) at the beginning of each presentation using Photo-Story 3. There were two reasons for this. The first was that it created one aspect in common to all of the digital stories and focused on the importance of the mihi. Of the programs available for the students to use, Photo-Story 3 was the easiest for the students to independently import photographs on to and then narrate over the top of them. The

second reason for using Photo-Story 3 was that the program is a free download from Microsoft and is accessible for students who want to use it at home. Developing basic editing skills using programs like Photo-Story 3 could then be utilized by the students at home and at school to share learning journeys. Photo-Story 3 has a number of generic tools and features found in other more advanced video editing software and is a great starting point for primary aged students.

After using Photo-Story 3 for the mihi, the program soon became the main vehicle for the group to collate digital and hand drawn images. The students then wrote, practiced and narrated straight into the program.

It was a little difficult tracking some of the engagement indicators that I had researched and decided on. In fact at the end of the first week I came to realise that they may indeed need to be revised as some were outcomes rather than indicators.

With this group I was very much an observer. I was keenly interested in how the art work promoted self talk and also how discussions about the art work they were exploring initiated discussion about their whakapapa (family history).

I also noted that when the students were working with a variety of ICTs they became less aware of me and more involved in what they were doing. The students' focus was on problem-solving as well as exploring the application possibilities.

During the final session, the students took an active part in using Movie-Maker 2 to import and edit the Photo-Story 3 files. Unfortunately the time issue meant that the students did not have time to investigate and trial all of the options for their titles and credits; but they were all very pleased with the final result.

Group 2: After completing the initial questionnaire, I asked the students if they would share with me their most memorable experiences at school so far and to share with me

what their ideal teacher would be like. Without exception all spoke of either EOTC (Education outside the classroom) or special days in class. As for attributes of preferred teachers they included teachers who were good at sport, would teach them the taiaha (long club), good at “computers” and would let them use them in class; and good at mathematics.

This group had not asked to work together, and needed to be given some time to get to know each other. They decided that a play would be one way to teach other students about Matariki but were a little concerned that they would not have time to write it and learn it before needing to get it on video. I was very cautious, following the action cycle reflections from the previous week, not to be as directive as I had been and made a conscious effort to prompt and guide and leave it at that. As they began talking about what they actually knew from the books and internet sites, they decided they could make a plan of the scenes and adlib the script. Braden, who was a year older than the other two provided quiet guidance and was shown a good deal of respect by the younger students. There is a lot to be said for multi-level cooperative learning.

Jeremy, who was the youngest in the group, decided that he might like to be the cameraman. He had not used the camera before but quickly picked up the necessary skills and was soon focused on getting the perfect shot. In one of the scenes he chose to have the sun behind the boys because he wanted them in silhouette. In another scene Jeremy was worried about the vibrations showing up on the film because of his hand movements. His response to one of the questions in the self-evaluation survey was “I felt proud when I found out I was really good at the camera. I was proud when I worked out that I could keep the shot steady if I put the camera on a chair.” By the end of the week, I was absolutely awestruck by this student’s creative direction and camera skills. What pleased me mostly was that he was one of the students who has not experienced consistent success at school and tended to spend a great deal of his time off-task, according to his mainstream teacher. For much of the week, as the group pieced together this play, he was in the flow, as Csikszentmihalyi (2002) would say. Jeremy was so intensely absorbed in what he was doing that he was surprised by the end of day bell and not quite ready to go

home. The play was so successful that they were asked to perform it in front of the entire school during the special “Matariki assembly”.

Group 3: Through brainstorming with the mind-mapping software “Inspiration”, this group promptly decided to use their talents by composing a song and creating some graphics about Matariki.

Three of the four students were highly enthused about this option but one of the students, Grace, had no interest in this at all. I was hoping that the others would realise that Grace was less than happy or comfortable with the choice. Unfortunately, the students forged ahead and did not notice that Grace was withdrawing further into the background. I initiated a conversation about the technical aspects of getting their recording down digitally and asked them how they intended to present it. Grace suggested they could maybe have photos or artwork scrolling through the song to help keep people interested. The others thought that was a great idea and immediately handed the total responsibility for that to Grace. From that moment on, Grace was animated and even chipped in ideas for lyrics when the others floundered. What struck me with Grace was that she was using programs and hardware she had not used before but had an impressive ability to transfer the knowledge she was gaining each day to develop ideas for quite complex presentation concepts.

By taking time each day to encourage the students to share what they felt were the talents of other group members, Grace soon became aware that she had a pivotal part to play in this group. Her self esteem and confidence became such that she happily took on an advisory role. She commented that she was “Interested by how much talent I never knew I had. Especially liked how I had the great talent of directing things.” Since working on this digital story, Grace and her family have downloaded Photo-Story 3 and she now produces digital stories to share with her whānau around the country. An incidental video snippet that captures the songwriters furiously writing the lyrics is delightful. I had reached over and turned the camera on, knowing that their paper was mostly covering it but thrilled that it recorded the students’ frantic communications and anxious moments

just in case the words were lost forever before being captured on the paper. As classroom teachers we often miss these moments. So to be able to observe these and reflect on the circumstances that led to them is very special. Chelsea, one of the songwriters commented “I felt like I wanted to stay for another million years cause I was excited for the other day. I have been enjoying making the digital story about my group singing.” At the end of the week, this group had produced a presentation using original digital photos based on nature that became the visual backing for a wonderful song that spoke of navigation, horticulture and family celebrations.

Group 4: As I began working with group 4, I realised that the Māori values that I had been learning about and observing were becoming embedded in my practice to a certain degree. Showing a genuine interest in the students’ whakapapa (family tree) and making explicit the expectations of support required from each group member seemed to set the scene well for a productive week. I had been ensuring that a little time each day was set aside for open and honest discussions. As part of this discussion, I had been encouraging students to identify talents in fellow group members. Each time we did this, the level of confidence and mana (respect) of the group rose. Group 4 was no exception. They had set themselves the task of documenting a class trip to the museum where we were to experience an education programme and exhibition about Matariki.

By the end of the first day they had recorded their mihi, made plans for the filming of their documentary and had already made phone calls to the museum to find out more information from the museum educator. Unfortunately that person was not available and as they tried to communicate their needs to another museum staff member they realised that they were ill prepared for phoning people for information. However, they had made an appointment to ring him back the next afternoon. This led to the students discussing exactly what they wanted to find out and who was going to do the talking etc. It also led to some very earnest role play. As the week unfolded, frustrations nearly derailed the student’s plans. The person that they had made several phone appointments with was never available and when we did get to the museum, the programme did not live up to the expectations of the students with regards to giving them further understanding about

Matariki. However, they did document the day and decided to interview each other in order to share with the viewer some of their personal understanding about the part Matariki plays in the lives of Māori.

This group was very intense and along the way several small conflict situations bubbled to the surface. It was vital before they went home that any concerns were aired and resolved and that goals were set for the next day. The values concept of noa and ea that I had read about in Mead's Tikanga Māori where balance is restored after times of unhappiness or conflict is a very practical value to focus on at the end of the school day and that is what we did. The final product was a well paced, visual presentation of the class trip where they used Movie Maker 2 to render their various digital files.

Group 5: Right from the beginning, this group was highly enthusiastic about using Digital Blue to create animations. They were not sure how to use the technology but had seen the results from other groups who had used the animation software for their titles and were keen to get started. They used Inspiration to sort their ideas and quickly saw that three main areas of interest had emerged. There was interest in developing an animation to show navigation. There was also interest in creating a cartoon animation that involved plants growing and included some stars and a moon from the Digital Blue movie effects. This was going to be a challenge as no-one had any ideas on how they might even attempt that. The third area of interest was in writing and recording a song to be included. Bearing in mind that we only had four sessions together, this was going to be a big ask. All students supported and encouraged each other. They soon discovered that they had to be self reliant to solve technical issues and that they needed to draw on the collective knowledge and problem solving strategies of the group.

I was particularly impressed with an aspect of their problem-solving that resulted in an original idea that combined traditional cartooning skills and the use of digital effects. Steven, Nate and Rawini created a cartoon animation of seeds growing into plants by making hundreds of small changes to their hand drawn graphics and taking a shot of each change with the Digital Blue camera. Once it was rendered it looked impressive. Through

exploration of the software program the students had discovered that you could add effects to your movie and that is what they did. A large moon, accompanied by an eerie sound effect and large orbiting planets were added. Ants crawled along the dirt and flies buzzed when the sun came out. It was only a minute of video but the work and thought that went into this was impressive. I would have dearly loved to have been able to allow the students more time as they had so many more ideas. There are Digital Blue cameras throughout the school so I have suggested to them that they plead a case with their teachers to carry on their explorations.

Group 6: By now I had completed five action research cycle evaluations. I had come to realise that I had been making more of a conscious effort to create opportunities for the students to become meaningfully engaged and that this improved practice was impacting positively on student learning outcomes. I was doing this by;

- Planning for and encouraging students to become actively involved in decision making opportunities.
- Providing a variety of forums and methods for students to ask questions.
- Through coming to know the students individually, I was more able to provide them with appropriate means to share and demonstrate their thoughts and ideas.
- Continually reminding the students of the audience for the digital resource as well as encouraging communications between themselves and their teachers about what they were doing.

I had become more confident to underpin my practice with Māori values that I had decided, by this stage would benefit all students regardless of ethnicity. And so I began working with the final group. An advantage for these students was that they were, by this time, very knowledgeable about Matariki and they had also had the opportunity to view and discuss the previous groups' work.

Group 6 decided to produce a digital story that used a variety of multi-media. Hand drawn art work was produced and digitally scanned. Animated scenes of firework displays using Paint and Digital Blue exploded on to the screen and a multi-choice quiz was written up and narrated with a combination of Photo-Story 3 and Movie Maker 2.

During the first three lessons, the on-going actions of one of the group members threatened to derail their efforts on a number of occasions. However daily group discussions soon make it clear to the student that his actions were not only affecting the group's desire for a positive result but was doing nothing to raise his mana (respect) in the group.

Another of the students that I had a lot to do with last year as his senior teacher provided me with a very real view of how ICTs can provide a vehicle for sustained higher order problem-solving. This particular student was often a visitor to my class having to explain his actions and reflect on positive strategies to cope with conflict and general lack of interest. There was noise all around him with narrations being practiced aloud and hoots of laughter as clay figurines no longer stood up to the clay animation process. Corbin's level of concentration, as he tried to figure out how to capture a screen shot in a program that hid the task bar, carried on through the entire lesson. He mastered that problem only to encounter other technical challenges. At the end of the day he was exhausted but had accomplished his goal and was justifiably proud of himself.

Probably the most revealing aspect of the week for me was working alongside Tipene who was a quiet student and appeared to be quite reserved. When the students were organising the recording of their mihi (greeting) Tipene asked if he could record a different mihi from the one he had prepared at school. He was superb. His fluency and delivery in te reo Māori (Māori language), and his confidence astounded me. It occurred to me that there was an important dimension about this student and probably many others that I had little knowledge of. If I am not aware of his gifts, how can I encourage and extend him? It is my responsibility, as a classroom teacher to identify students' needs wherever on the continuum they might be. I may never have become aware of Tipene's oratory gifts had he not felt comfortable enough with me to ask if he could record his pepeha (introduction) rather than the mihi recorded by the other students. I know that this experience with Tipene will positively impact both my teaching practice and in my role as team leader.

Conclusions and emerging questions

Cultural connectiveness elements of best practice:

To create a classroom climate for Māori students to be meaningfully engaged in their learning, I have found that it is important to connect with the student's culture by:

- providing learning context that are meaningful to the lives of the students;
- showing a genuine interest in the Māori added pathways that students are involved in;
- providing opportunities for students to share with their mainstream classmates what they have been doing in their Māori added pathways;
- working to develop a culture of positivity towards things Māori among mainstream students;
- facilitating discussions with students about Māori dimension of their lives; and
- sharing and adopting Māori values in our classroom.

Emerging question: What are the most effective forms of professional development to help non-Māori mainstream teachers gain a greater understanding of Tikanga Māori?

Engagement indicators:

As the action research cycles evolved, I found that when students are meaningfully engaged in their learning I am likely to see students who actively participate in decisions about their learning and who ask questions. They are likely to want to share their ideas and take opportunities to demonstrate and expand on them. The students will also be generally interested in what others think of their work. With these aspects in mind I need to provide opportunities for students to:

- be actively involved in decision making opportunities;
- ask questions during the learning process;
- discuss or demonstrate own ideas and expands on them; and
- develop interest in self/peer/teacher assessment and feedback.

Emerging question: Bilingual students from years 4-6 were successfully and meaningfully engaged in project-based learning. What changes could we make to use multi-level project-based learning across year groups at our school in the bilingual students' mainstream classes as well?

Exploring how ICTs can be used to share learning journeys and cultural experiences.

Originally I thought that the importance of ICTs in my action research would be to raise engagement levels. Although this did happen and had a number of positive benefits, including greater confidence to mentor others, two other important factors arose. The first was that the ICTs became a vehicle for the bilingual class students to share their learning journey with their mainstream classmates. Throughout the action research I have reflected on the importance of connecting our cultural experiences. Careful consideration needs to be given to planning communications between Māori added pathways and mainstream education. Dialogue with all parties needs to take place for this to happen.

The second was the interest shown by mainstream students in the process of creating the digital resource and the raised level of confidence by the bilingual students to offer help to their mainstream peers. I have every confidence that many of the students involved in creating their own digital stories will have a positive impact on the learning experiences of their mainstream classmates.

Emerging question: How can we use ICTs to raise further the profile of the bilingual students in our school?

Summary

This action research has allowed me to observe how project based learning using digital technologies have created opportunities for bilingual students at our school to develop and share important aspects of their lives with their mainstream teachers and classmates. I have been reminded of the importance of connecting with all students through showing genuine interest in the cultural dimensions of their lives as well as building in vital elements of best practice that allow for students to become meaningfully engaged in their learning. This learning journey for me is by no means complete. With help from cultural experts in our school and local community I will strive to gain a greater understanding of both tikanga Māori and te reo Māori . In my role as team leader I now have a clearer idea of how to guide and advise my colleagues when issues of disengagement surface. I will continue to reflect on my own practice and leadership, inquire into better ways of doing things, make changes where necessary and continue to reevaluate.

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Glossary of Māori terms.

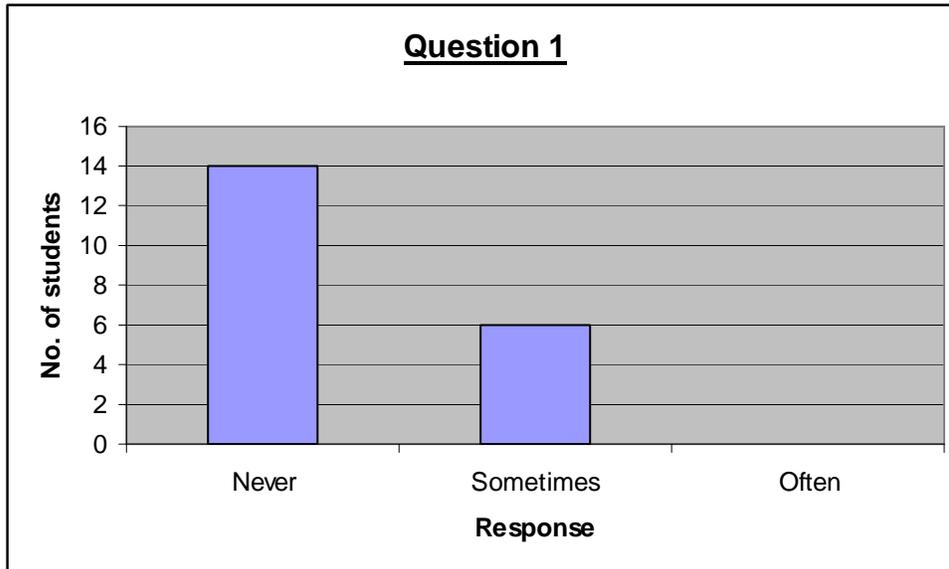
Hapū	Sub-tribe
Hui	Meeting
Ihi	Assertiveness / power
Iwi	Tribe
Kapa Haka	Performing arts
Kōtahitanga	Unity and bonding
Mana	Respect, prestige
Manaakitanga	Respect, caring, kindness and hospitality
Māori	Indigenous people in New Zealand
Matariki	Traditional Māori New Year. The Māori name for the group of stars also known as the Pleiades star cluster
Mihi	Greeting
Noa and ea	Free from tapu. Finished
Pepeha	Method of introducing yourself in Māori
Taha hinengāro	Mental and emotional well being
Taha whānau	Social well –being
Taiaha	Traditional fighting staff that was used in close hand to hand combat
Tapu	Sacred, prohibited, confidential, taboo
Te ao Māori	The Māori world
Te Kōtahitanga	Research project. The Experiences of Year 9 and 10 Māori Students in Mainstream Classrooms.
Te Reo Māori	The Māori language
Tikanga	Rule, custom
Waka	Canoe
Whakapapa	Māori genealogy
Whānau	Family / Extended family
Whanaungatanga	Inter-relationships

Appendix 1 Indicators of meaningful engagement in learning.

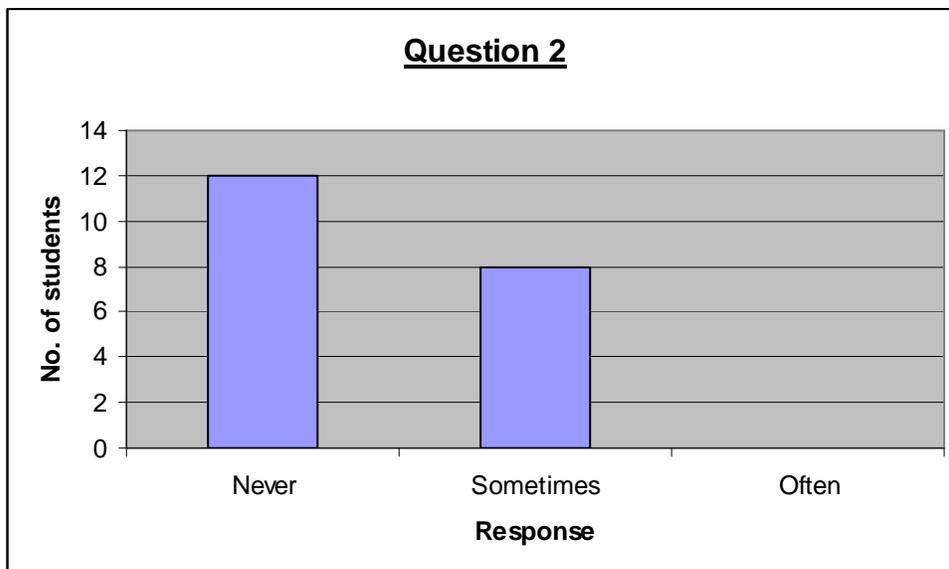
<i>Indicator</i>	<i>Rationale</i>	<i>Possible Evidence</i>
Student is actively involved in decision making opportunities	<p>Taha whānau (social well –being) is given the opportunity to develop when students are able to make decisions regarding who they work with enhancing feeling of belonging.</p> <p>When students respond to the opportunity to have input into their learning that is to take place it is also likely that they feel valued and listened to. Students are likely to become active stakeholders in their education.</p>	<ul style="list-style-type: none"> * Documented evidence of involvement in planning. * Examples of learning journeys that acknowledge student decisions. * Classroom observation of students cooperatively and meaningfully involved in decision making conversations and experiences.
Student asks questions during the learning process:	<p>When students ask questions to elicit information or to clarify interpretations, they are more likely to have a greater understanding of learning processes and outcomes. When this clarity exists, learning is likely to be less arduous and students more meaningfully engaged.</p> <p>If students are given the opportunity to “ask” in a variety of forums, it is likely that all students may become more meaningfully engaged in their learning.</p>	<ul style="list-style-type: none"> * Observation of students confidently able to ask questions of each other, the classroom teacher or other people. * Students can explain their learning journey or learning tasks with clarity and understanding. * Students use a variety of methods to pose questions that may include asking directly, asking indirectly, emailing them, posting them on the wall/ board etc
Student discusses or demonstrates own ideas and expands on them:	<p>Students are more likely to be meaningfully engaged if they have opportunity to express thoughts and feelings which contribute to Taha hinengāro – mental and emotional well being. They are more likely to develop confidence and self-esteem when their ideas are listened to and valued.</p> <p>By its very nature, discussion and expansion of ideas requires the student to communicate with others in a meaningful manner thus engaging them in their learning.</p>	<ul style="list-style-type: none"> * Students seek out and use opportunities to share and explain own ideas using a variety of methods to do this.
Student demonstrates interest in self/peer/teacher assessment and feedback.	<p>Students who are interested in judgments made about their learning are likely to have been committed and actively involved in the learning process.</p>	<ul style="list-style-type: none"> * Students ask for feedback. * Students refer back to criteria throughout learning process. * Students share feedback given with other interested parties.

Appendix 2 Preliminary survey

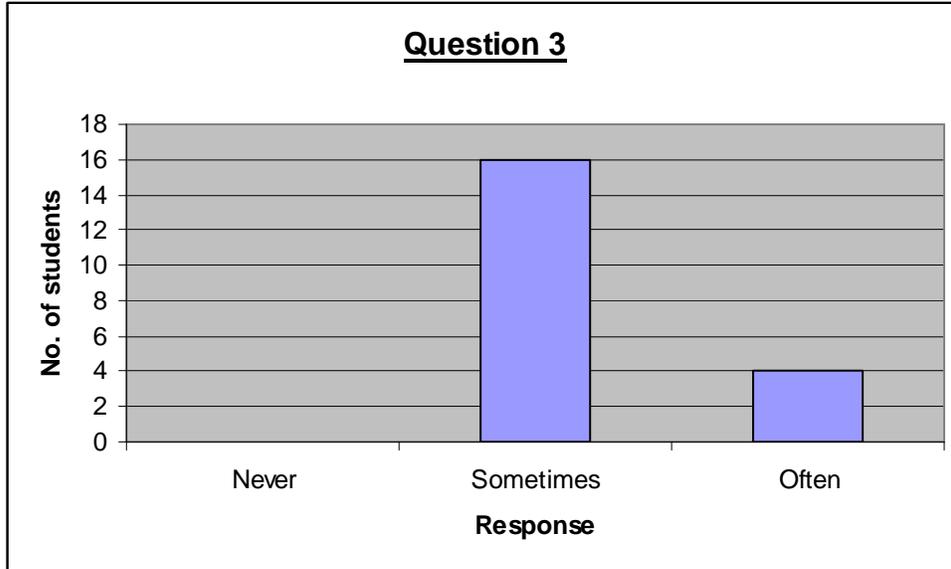
Question 1: How often are you asked to share what you do in Te Reo by your mainstream classmates or teacher?



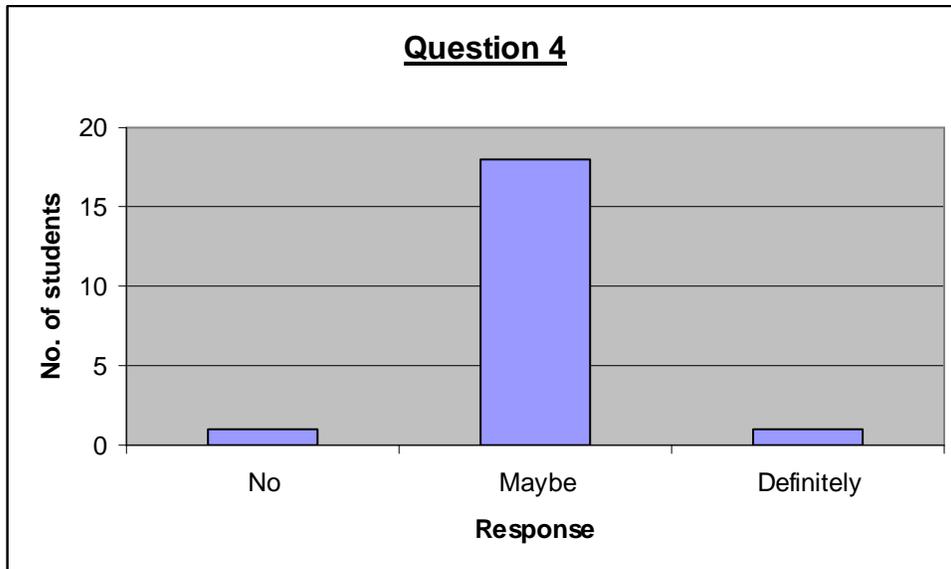
Question 2: How often do you actually share what you do in Te Reo with your mainstream classmates or teacher?



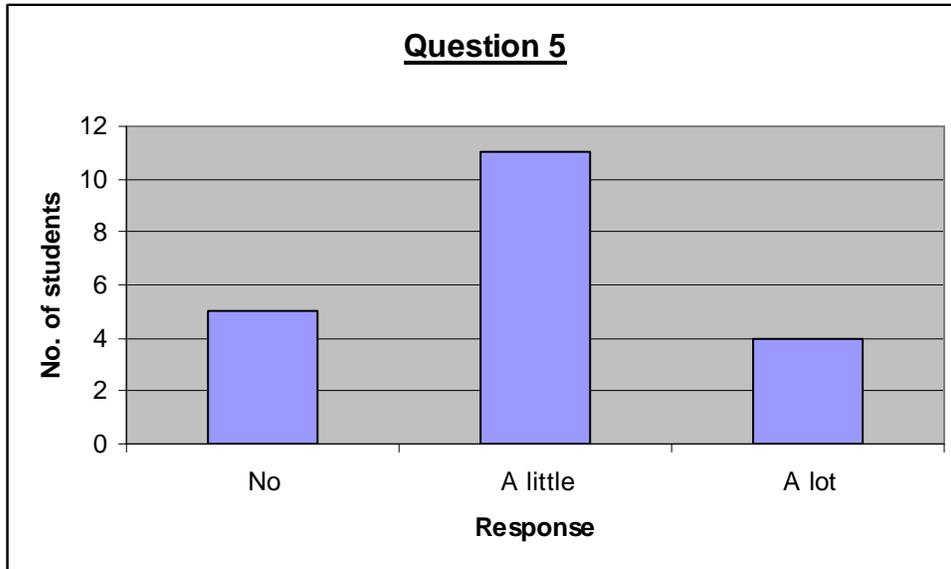
Question 3: How often would you like to share what you do in Te Reo Māori class with your mainstream classmates and teacher?



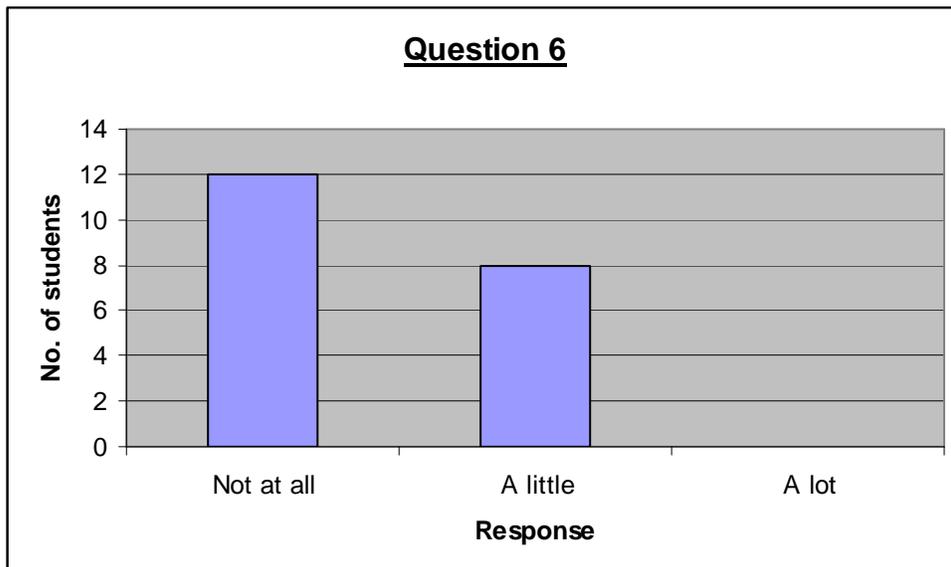
Question 4: Do you think that your mainstream classmates and teacher might be interested in what you do in Te Reo?



Question 5: Do you feel confident using the presentation programs on the computer like PowerPoint?

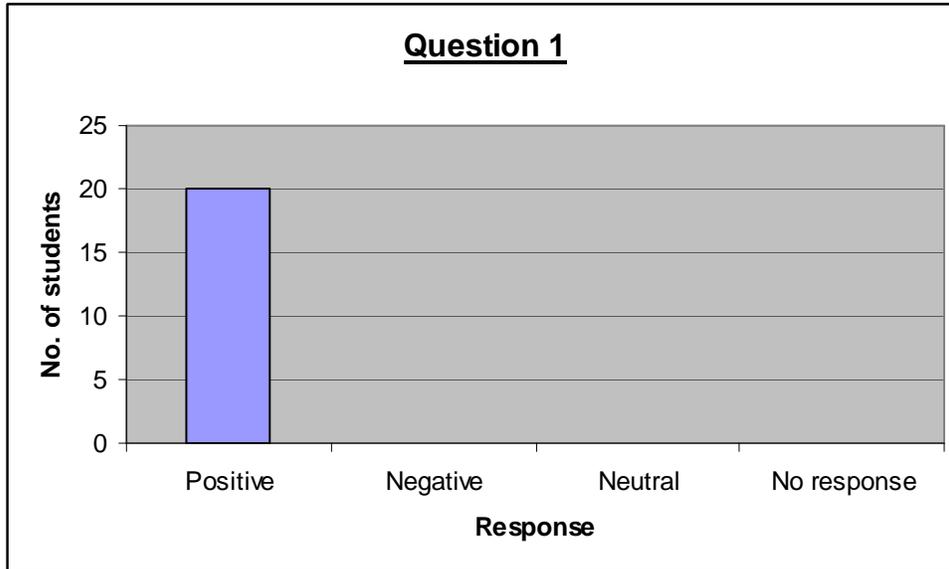


Question 6: If your mainstream teacher or classmates wanted help with ICTs, how confident would you feel to offer help?

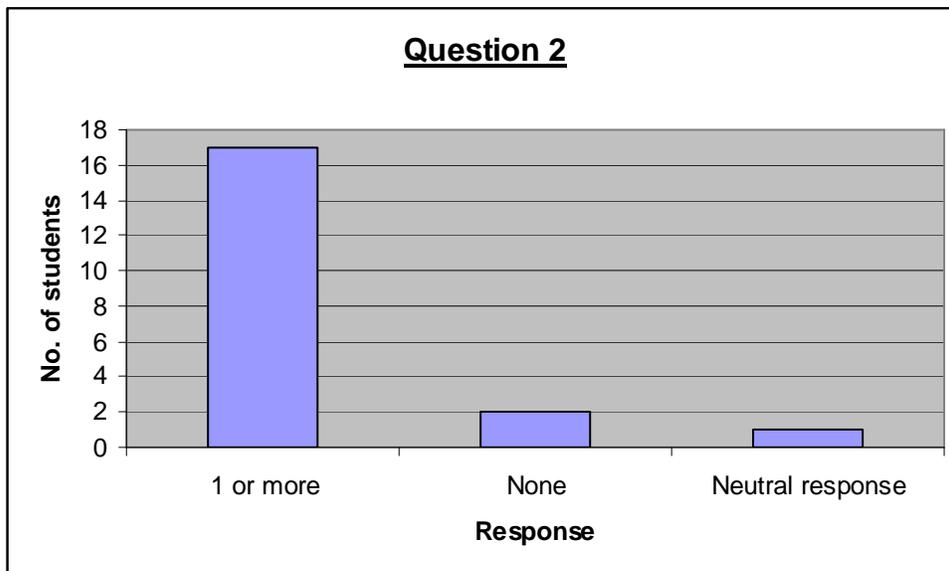


Appendix 3 Digital story – Self evaluation sheet results

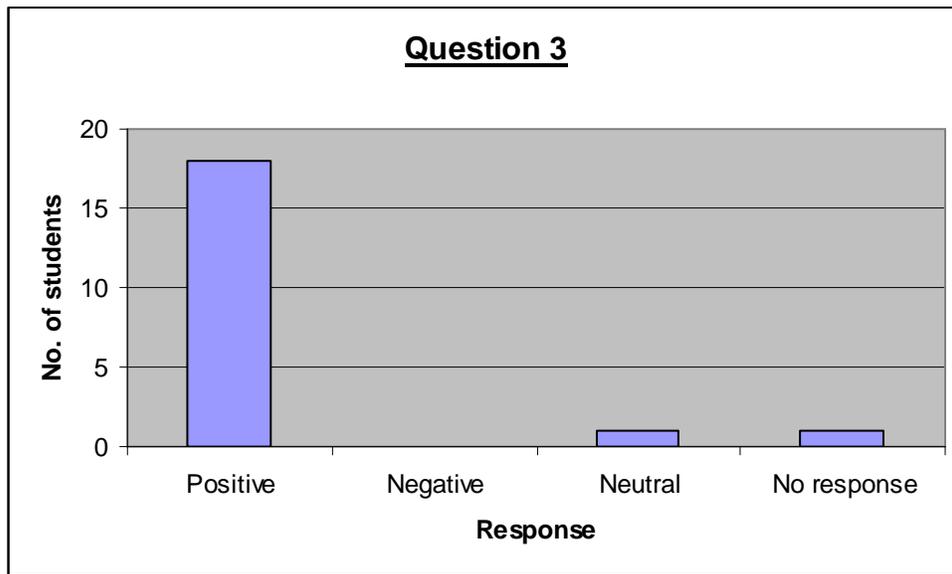
Question 1: How did you feel about working together each day on your digital story?



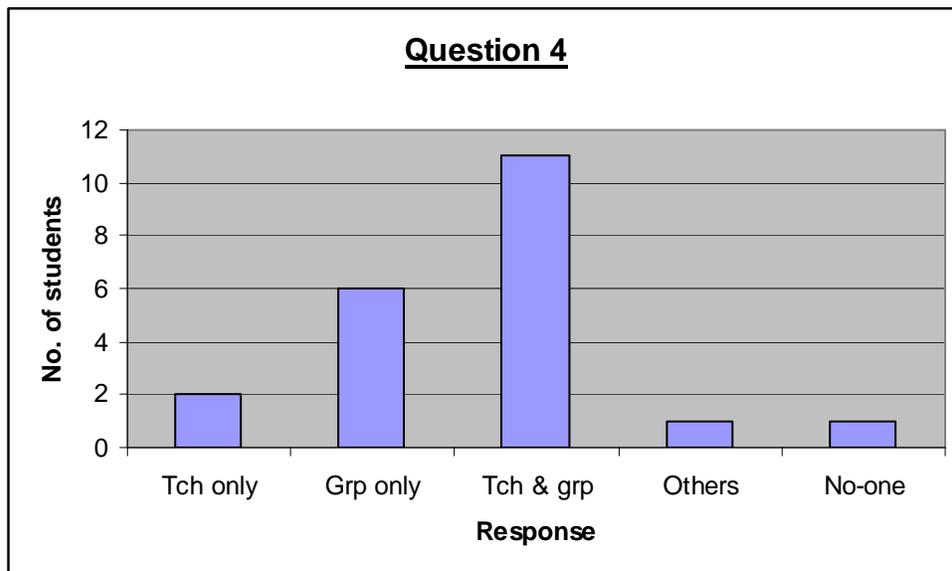
Question 2: What opportunities did you have to be involved in making decisions about what you did this week?



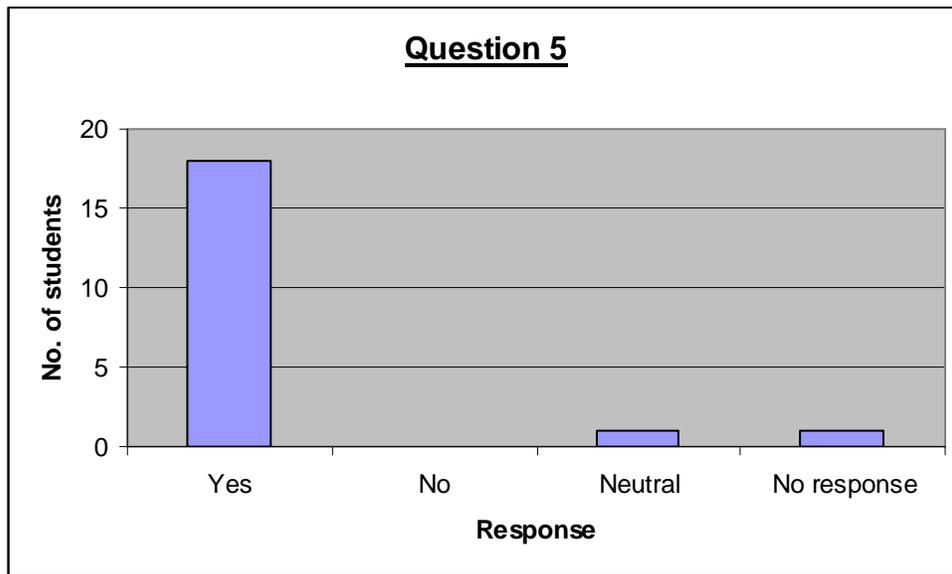
Question 3: How does it feel to help plan what you are learning about?



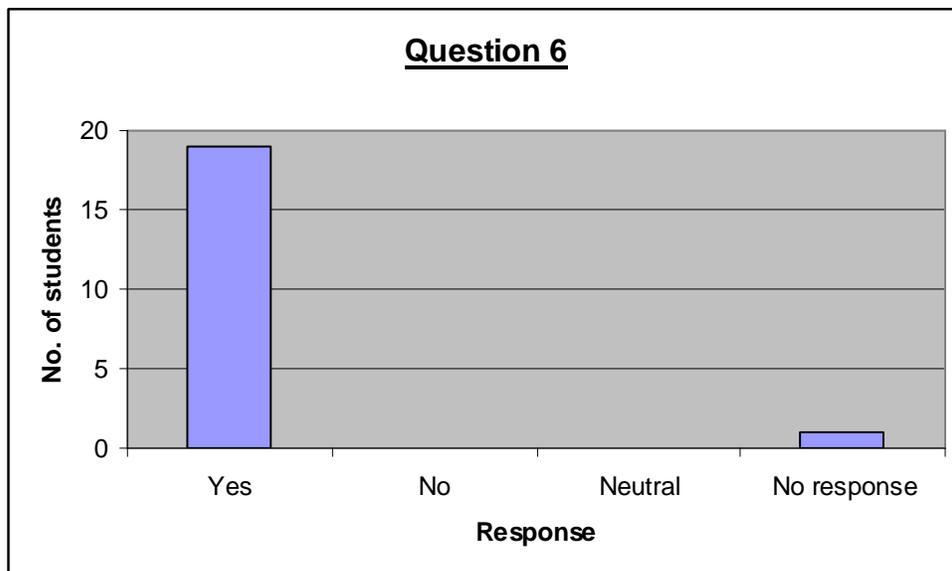
Question 4: If you weren't sure about anything, who did you ask for help?



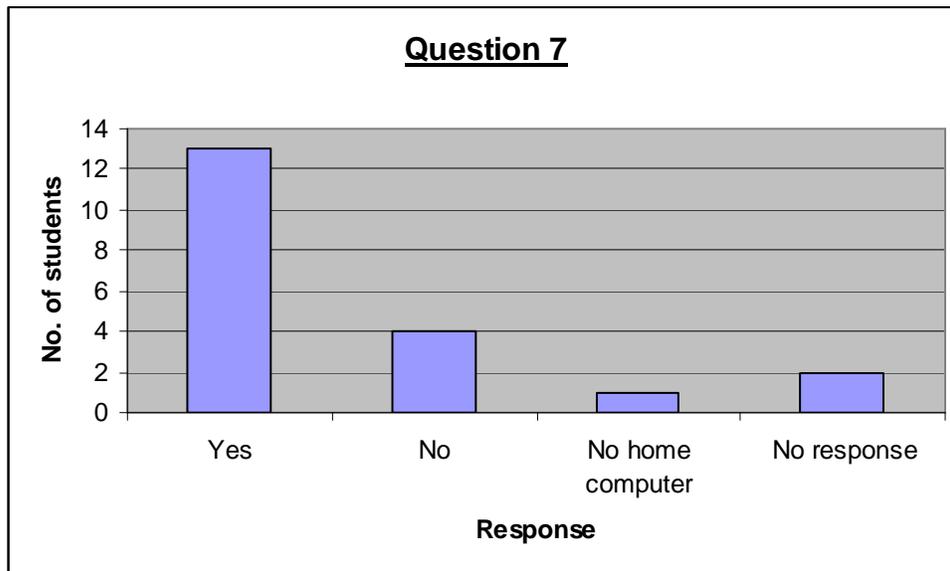
Question 5: Did you get the chance to explain your ideas?



Question 6: Your class and teachers will get to see your digital story. Are you interested in what they think about this?

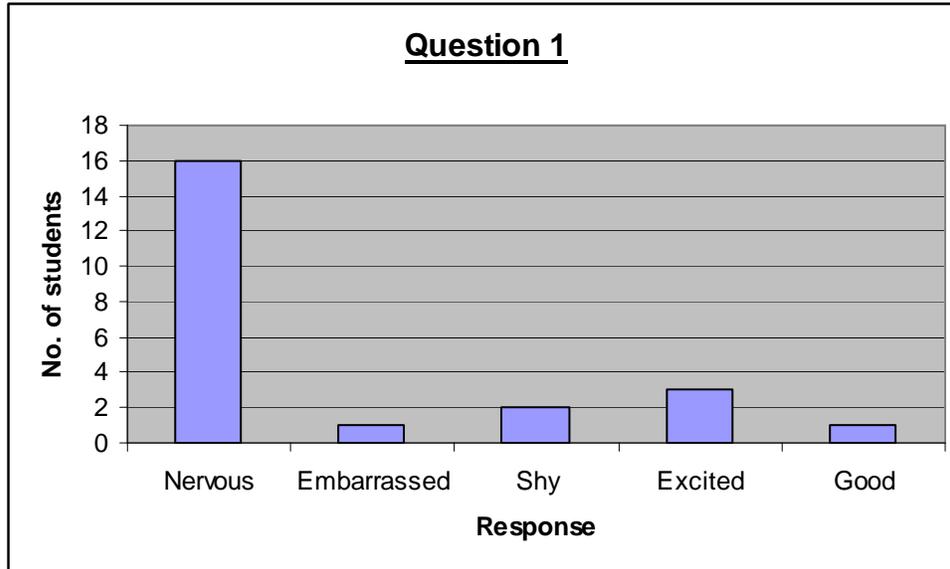


Question 7: Can you think of ways that you could use the free programs at home with your family and friends?

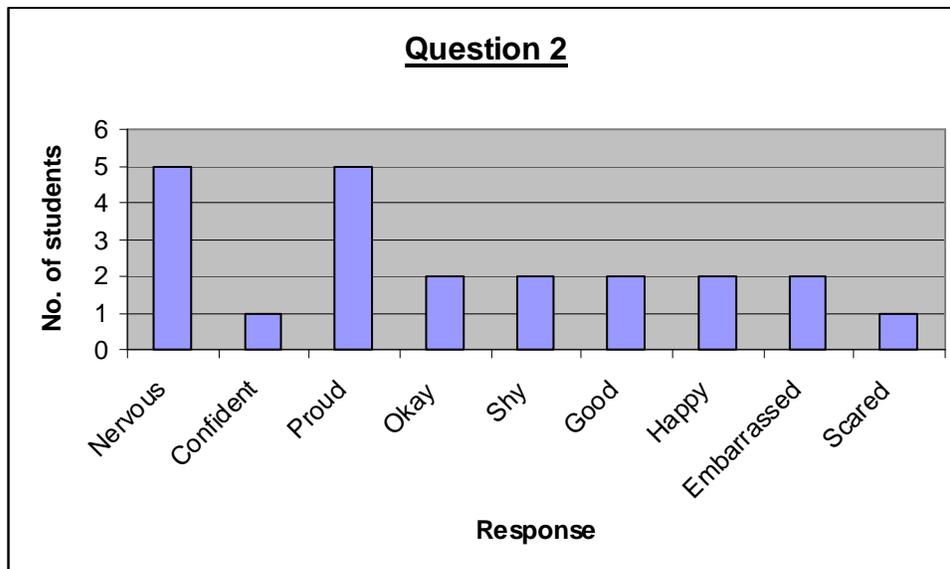


Appendix 4 Sharing of the Matariki Digital Resource

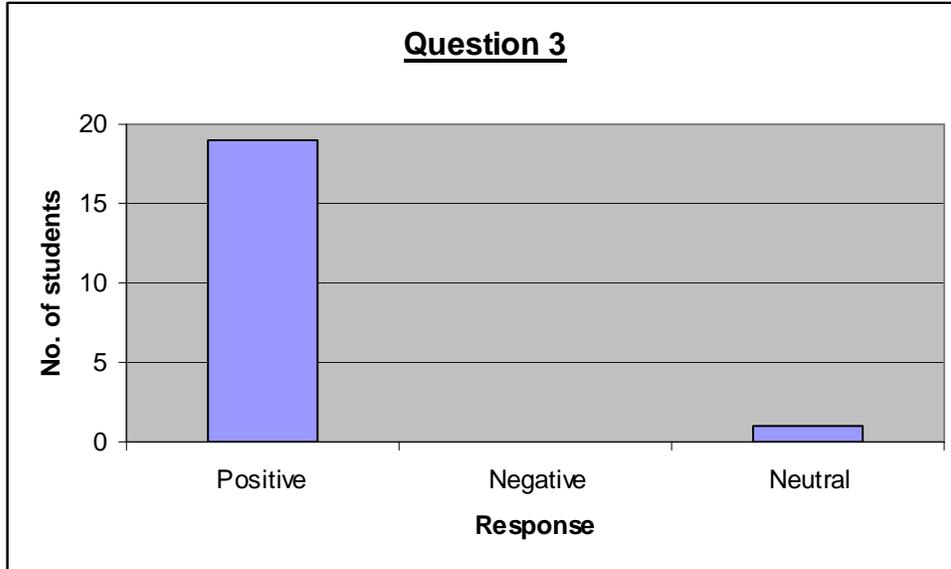
Question 1: How were you feeling just before you actually got to share the CD with your class and teacher?



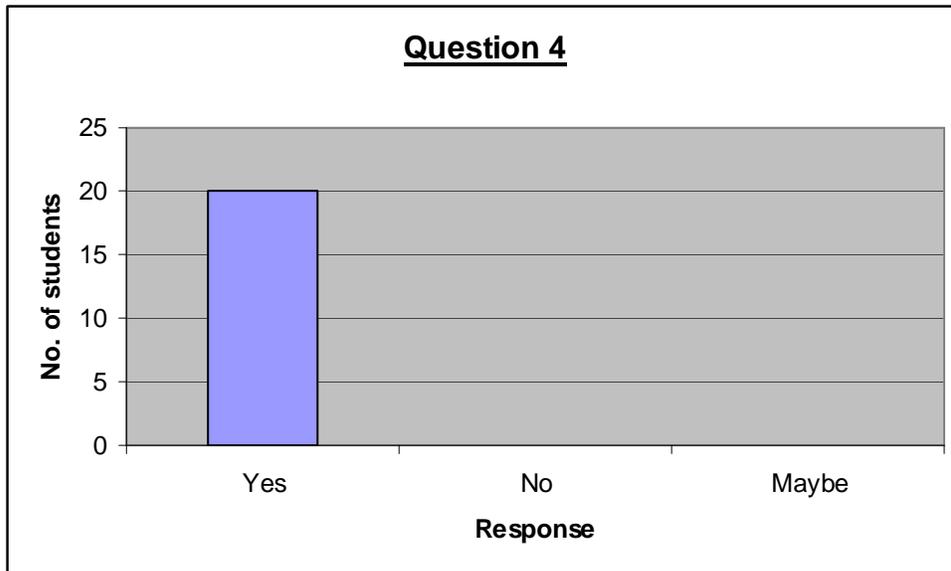
Question 2: How were you feeling while you were sharing the digital stories?



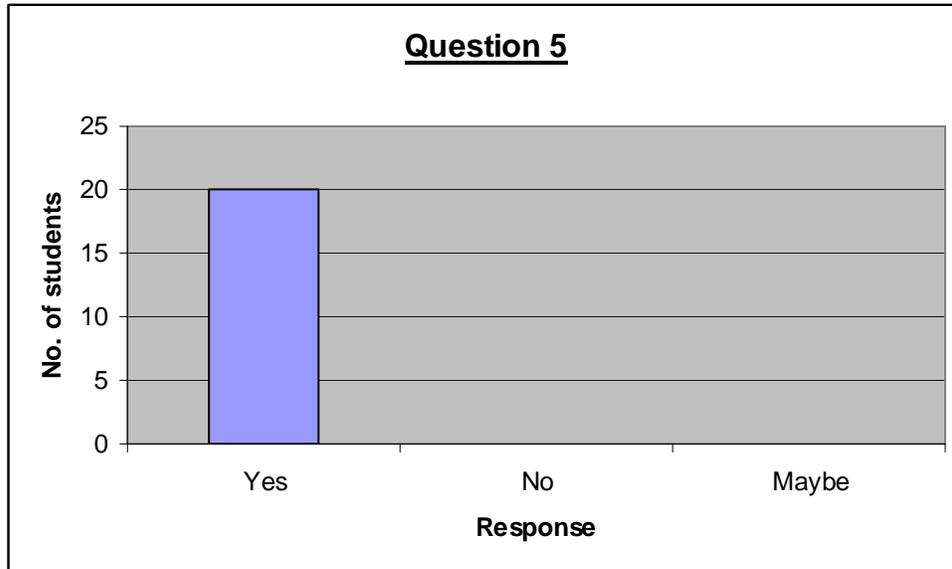
Question 3: How did people react to the Matariki Digital stories?



Question 4: Do you feel okay now about sharing the digital stories with other people?



Question 5 If your class was making their own digital stories and needed help, would you feel confident about offering them help?



Appendix 5

Reflective diary excerpt

Monday

I have had to switch around my intended groups as the taiaha tutor for the boys is now coming a lot earlier than expected.

Group 3

This week I am working with a very talented group of students who has got off to a great start. There are four girls, two are sisters and the other two are their friends. Three of them are extremely musical and the other has a keenness and a talent in art.

We did quite a bit of talking together today. I asked them if they would mind sharing aspects about their whānau and cultural experiences. This was a valuable icebreaker. We reviewed what the other groups have done so far and a brainstorm on Inspiration soon had them excited about writing a song. All except Grace were happy to ask me questions directly today. I know this had something to do with the connections I had made the effort and given time to make.

They used their mihi and a digital photo that they each took to create their first movie using Photo-story 3.

The students quickly realised the potential of digitally recording their song and quickly went to work in writing it. Three of the girls have had a lot to do with singing and talent competitions at the school and were very confident. Grace was less involved from the outset and I could see that her level of engagement was far less than the other students.

While the others were trialing tunes and working out lyrics, Grace was looking around or doodling on paper.

I interrupted and suggested that as time was an issue and they wanted to do computer art of go along with their song, perhaps one of them could maybe get that started rather than wait for tomorrow.

Grace's hand shot up and she was soon intently working on an illustration that would fit with the song. She began connecting with the group, making suggestions and giving feedback.

I found the process of their songwriting absolutely amazing. They are so very talented. I have no doubt that these girls are future chart toppers. I am keenly interested to know how they are in their mainstream class with regards to writing because they were so intense during their composing that the level of excitement and furious writing was quite extraordinary. At one stage my camera was sitting at their table and I reached over and turned it on and captured a short segment of what was happening throughout this session - true meaningful engagement. All girls wanted a copy of the lyrics to take home and work on and all exchanged phone numbers so that they could carry on after school.

The majority of this group seem very committed to their Māori education and have had quite substantial involvement in Te Reo and Kapahaka already. Interestingly only one of

them says that she is asked to share what happens in Te Reo with her mainstream teacher or classmates and yet all of them would sometimes like the opportunity to do this and all of them believe that their mainstream teachers and classmates might be interested in what they do. Already this indication from the students is impacting on what I will be taking on board for my own mainstream practice as well as in my role as team leader. I believe it would have only positive spin-offs if we (mainstream teachers) make a concerted effort to consistently provide an opportunity for students attending any of the Māori education programs to share these with us. Although I recall many times asking student how was Te Reo or Kapahaka, upon reflection the amount of times I gave opportunities for these students to truly share with the rest of us was very limited.

Tuesday

There has been a bit of a drama. Libby is less than impressed that the two sisters worked on **their** song during the night and did not ring her. So, after a few minutes stand-off between the three with their hands on hips and heads turned away, I suggested that perhaps Chelsea and Shantelle could share what they have done so far and see if Libby had any ideas to add. The atmosphere quickly warmed up and they were soon busy re-scripting a couple of lines, much to Libby's approval. It's hard to pull back totally when sometimes a quiet word or a few moments of mediation can clear the way forward.

All the while, Grace had quickly got on to working on her computer art. She imported some space photographs that I had in a folder and used some of them in her pictures. One of the girls brought up that Matariki "wasn't all about space you know". She said it had a lot to do with when people planted crops and other plants. Chelsea asked if they could all go out and take some photos of nature. So off they went.

I asked them to limit it to five photos as time was marching on. I said five as it would mean a negotiation as it was not an even split for the four of them. Shantelle suggested that, because Grace was the main artist that she should take two of the photos. This really was what Grace needed as she had been working away so earnestly and I think that she wondered if they knew what she was up to. It was great to see Grace looking so proud of herself. As it was, Grace took only one and was quite happy with that.

I was astounded at the quality of Libby's tree photo and Chelsea's artful use of shadows. They had taken their time to get the shot just how they wanted it. The angle used, composition and colour contrast is phenomenal (I think ☺). I have emailed Libby's photo to our principal and know that he will make an effort to acknowledge this outstanding piece of work.

It's been awesome to see Grace showing a keen interest in sharing her technical knowledge and offering advice. I have endeavoured to ensure that all of the students take some form of lead role. I need to be very careful that this doesn't create a fabricated situation.

Once the photos were uploaded, Photo-Story 3 was used to import the photos and the art work, placed in the order that Grace thought would work with the song and then the

recording began. As the girls sang, Grace timed each picture for around 12 seconds before clicking to the next. It worked really well, though did take a number of “takes” as the girls were quite self critical. When previewing we noticed that you could hear the click-over when Grace selected the photo/pic on the timeline while the song was being recorded. The solution seemed to be to try to time the click-over to the end of a sentence. I thought it was terrific and in the end I hope the girls are happy with it. They seemed tired at the end of the session today and I’m not 100% sure that they are happy with the outcome.

Wednesday

At the beginning of today’s session we reviewed what has happened so far. After viewing their Photo-story song presentation, they were all really happy with the product. I explained to them that we had lots of time and if they wanted to re-do it, it would not be a problem but they were quite happy with it as it is. The final part of the digital story left to do is to create a title, or introduction for the presentation. Even though none of the girls had used Digital-Blue, they had all heard about it and were keen to use it to create an animated title.

I spent ten minutes introducing the girls to the movie animation features of Digital-Blue. Had this been my own class, I would have allowed time for the students to explore and discover the features themselves but, once again, time constraints have led to a slight change in my practice. They were itching to give it a go, so I got the play-dough and bag of plastic animals out and let them work in pairs to create a mini-film. I asked them to think about their title as they were having a practice. They had a ball. It is easy to forget the joy that kids get from modeling and laughing together as they learn.

They decided to keep their characters for the title, though I’m really not sure what a yellow monster blob might have to do with Matariki. However, the title was created with Grace taking on the director’s role. Two scenes were created. The first was a slow aerial swoop of the scene with the characters saying “Hey Look”. Next scene showed fireworks



in the sky over the characters as they moved towards the camera. During their practice time they had discovered the effects that could be added and they used that knowledge to put



together the cutest title. Here are a couple of stills captured from the movie clips...

This really is the coolest program. It’s not just the features that the program offers it’s what the students need to do to get it all to work for them.

Some of the questions that were asked today related to file management, importing and exporting pictures, why icons of files looked different to each other and how to use frames to get timing exact.

Once the students have these skills I have no doubt that they will use them in their classes to create as well as support others as they learn. This has got to have an effect on levels of engagement in their mainstream classes. The biggie is though; would these students have the confidence to say... "Hey I can do this?" Food for thought.

One area that continues to show potential for my classroom practice is continually encouraging the students to look for and share each others talents. To receive compliments as well as to give them takes some getting use to. But when these are stating the strengths in others it becomes a lot more than just compliment swapping. Pride, confidence, respect and developing warmth soon builds with the team members.

I have begun to speak to the students each day about my interpretations of experiences they are having. This is really valuable as a couple of times when I thought one thing, the kids have put me right by simply saying "No I actually meant...."

Thursday

Today we spent our time rendering all of the shots together onto Movie-maker 2. I'm really pleased with how all of the other applications save as AVI files and if they are too long, movie-maker seems to be splitting them into "do-able" chunks that aren't causing the program to crash. With the boys all working hard on the field with their taiaha tutor, the group were more than happy to share their work with the other girls in the class. During the week, I had managed to scrounge up a pair of speakers that worked on the laptop and it really made a difference when the girls shared their work.

They got such a great response from the others who wanted to see it over and over again. The girls were also keen to share the processes involved in the final product and were happy to stand in front of the class to explain what they had done. It's been a really positive day.

I asked the girls yesterday to jot down some of things that they have learned and/or enjoyed this week. All four girls concentrated on listing what they have learnt. Today I asked if they could spend a few minutes writing down their feelings about working on their digital story. The comments from both requests are as follows;

Libby:

What I've learnt this week- I have learnt how to use a Digital Blue (camera). And when I took a photo Mrs. Gibbs said that she would pay 300 (dollars).

And I got on better with Chelsea and with team mates.

I learnt how to photos on to the laptop. And I might even be a photographer. Learning's really good with others.

I felt 1. excited 2. confident 3. impressed 4. cool 5. now I know it wasn't impossible to do lots and lots of computer things and heaps of work on the computer.

Chelsea:

What I've learnt this week- I got to learn how to use photo-story. I got to make play-dough men. I got to take a photo of people.

I also got to meet Miss Gibbs. And I got to sing on these microphone things that you talk into. I got to make up my own song. We learnt how to use a camera. I also got to play with the laptop. I worked really well only in this class. I got to meet other people. I got to spend more time with my sister. I got to spend more time learning about Matariki. I found out how to use a digital blue. Even now at such a little time we've worked so hard. We get to do all this cool stuff.

We took photos of plants. And I am really going to miss this class. We did some animation. We took turns on the laptop to get the job done. I helped other people. Miss Gibbs showed us the laptop and what it does. And Grace is a really good photographer. It helped me to learn about Matariki.

The room was a little messy but oh it was full of electronic things. And when it was Tuesday I couldn't wait until the afternoon came. And now I have a lot of confidence of being in front of people and I enjoyed being here with everyone.

Now that I have been through with Mrs. Gibbs, I feel very confident and mature and kind of a tingly type of thing that you get when you can't wait until the next day and now I feel like I have just held on to something that I've done with Miss Gibbs. And now I have to let go of it. So now I've known.

Shantelle:

What I've learnt this week- I have learnt that you should not aim the camera towards the sun. You should always have it behind you. I have learnt what you can do with digital blue effects. I have learnt that you can do cool things with photo-story 3. I like what we did with the play-dough.

I learnt that with just a little group that a little group can go far. I learn that you could use the computer. I learnt a really good song with my friends. I really enjoyed the time with Miss Gibbs. I really enjoyed her technology.

Now that I have been with Miss Gibbs I have been excited, confident and I am proud of what I've done.

Grace:

What I've learnt this week- On Monday we used Photo-story 3 and I used pictures from space.

I was the director for the movie that we made. I got to take photos of the park.

We got to narrate our mihi on Photo-story 3. We got to make some little creatures and put them on some little animals. For the little animals we got to use Digital Blue and take a movie of them.

I feel really amazed because I did not know that I (have) a natural talent of directing. So now I feel really experienced.