Future Ready:  
Developing a collective understanding of a school tagline

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Abstract

This case study researched the way a New Zealand school attempted to develop a collective understanding of a complex pedagogical concept. The school’s tagline, ‘Future Ready’ (FR), was introduced to reflect Kristin School’s pioneering and progressive approach to education. However, as the meaning of FR was not explored when the tagline was introduced, staff members have differing understandings of what FR means in theory and in practice. To develop a collective understanding of FR, a small group of staff members attended a series of six workshops over a three-month period. These workshops gave staff an introduction to research on futurist thought regarding predicted global changes driven by megatrends such as automation, artificial intelligence and exponential growth in computing power. Environmental challenges such as climate change were also considered, as well as the impact of these global issues on students and the ways in which they can be addressed. The workshop group discussed, debated, contextualised and synthesised the research shared with the aim of developing a collective understanding of FR. A mixed-methods approach was used to evaluate this action research project. Concept mapping was used to show a change in workshop participants’ thinking over the course of the workshops, and the impact of participation in the workshop group was measured using pre and post-workshop interviews. Engeström’s (1987) Cultural-Historical Activity Theory was used as a guiding framework. The study found that participation in a series of carefully-crafted workshops enabled a representative group of staff to come to a collective understanding of a complex pedagogical concept. However, attempts to engage the wider school staff in the development of a collective understanding had little impact. Further research is required to understand how to better engage all staff in the development of a collective understanding.
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1. Introduction

Kristin School (Kristin) is an independent co-educational school in Albany on Auckland's North Shore. Kristin caters to students from Kindergarten to Year 13. Approximately 1,600 students of diverse ethnic backgrounds are currently enrolled. Kristin has a history of educational innovation. It was the first school in New Zealand to offer the International Baccalaureate (IB) Diploma and is the only New Zealand school offering the IB Primary Years Programme, Middle Years Programme and Diploma Programme. There is a strong digital learning programme across all year levels, and Kristin students repeatedly score well above the national average in standardised tests (e.g. 91% of students achieved University Entrance over the 5 years from 2012-2016, placing Kristin in the top six schools in Auckland, New Zealand) (Zwartz, 2017).

In response to China’s increasing global influence, Kristin became the first school in New Zealand to offer Chinese Mandarin as a language to all students in 2001. In recognition of...
Kristin’s history of innovation and foresight, the Senior Leadership Team and the Board of Trustees decided to replace the school tagline, ‘Building Greatness’, with ‘Future Ready’ (FR) in 2013. For the majority of staff, an awareness of this decision first came about when they were given marketing materials which carried the new tagline.

The FR tagline has been used in a number of ways for the past five years. It is embedded into the school logo and included beneath the staff signature in school emails. It also appears in all school correspondence with parents and community members, and is prominently displayed on the school website and in marketing materials. The tagline is used in external publications, such as advertisements for teachers: “Kristin offers the opportunity to work with exceptional leaders who are dedicated and passionate about creating world citizens who are truly ‘Future ready’.” (ISNZ vacancies, 2017, p. 4). While Kristin has a clearly understood school motto, Mission Statement and Vision Statement, it is the FR tagline that is used to promote the school to the public and it is therefore necessary for staff to have a clear understanding of what this means.

When I started teaching at Kristin in 2015, I was intrigued by the tagline and its meaning. Through discussion with colleagues, I found that most staff were able to articulate a simple definition: FR means that Kristin prepares students to be ready for the future. Upon deeper questioning, e.g. *What does ‘future’ refer to? Do we know what the future holds? If not, how do we prepare students to be ‘ready’ for something unknown?*, answers varied widely, and most staff became less confident in their response. These conversations spurred on what was already a personal interest in this area and I felt compelled to explore what it means to be FR within the Kristin context.
1.2 Stakeholder engagement

To determine whether my anecdotal evidence gathered through staff conversations was accurate, I was given permission from Kristin’s Executive Principal to survey the staff on their understanding of the FR tagline. A physical survey (see Appendix 1) was given to Kristin staff on January 23, 2017, followed by a digital copy shortly after. Ninety-three staff responded from a total of 235 staff (40% response rate). Responses to the survey were received from staff working in diverse areas of the school, including members of the Senior Leadership Team, sports coaches, chaplains, librarians, counsellors, ICT technicians and teachers of all areas from the kindergarten to the senior school. The survey required respondents to answer seven questions regarding the FR tagline’s meaning, impact upon practice, and importance within the school.

The first survey question was: “Kristin School’s tagline is ‘Future Ready’. Please define what you think this means.” To analyse the responses to this question, the 93 responses were entered into an online database. A word-filtering tool was used to remove high-frequency words such as the, a, and etc., leaving only the relevant keywords remaining. The top 10 most commonly used words are listed in Table 1 below.

Table 1
Q1 Responses - Filtered Word Count

<table>
<thead>
<tr>
<th>Order</th>
<th>Word count</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>students</td>
<td>61</td>
</tr>
<tr>
<td>2</td>
<td>future</td>
<td>52</td>
</tr>
<tr>
<td>3</td>
<td>world</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>preparing</td>
<td>27</td>
</tr>
<tr>
<td>5</td>
<td>skills</td>
<td>26</td>
</tr>
<tr>
<td>6</td>
<td>ready</td>
<td>23</td>
</tr>
<tr>
<td>7</td>
<td>life</td>
<td>17</td>
</tr>
<tr>
<td>8</td>
<td>school</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>changing</td>
<td>13</td>
</tr>
<tr>
<td>10</td>
<td>prepared</td>
<td>12</td>
</tr>
</tbody>
</table>
Analysis of the filtered word-count shows that the majority of respondents are using FR in reference to students (61 occurrences), as opposed to staff (3 occurrences), or the organisation as a whole (2 occurrences). The word ‘future’ was used in many responses (52 occurrences) and many references were also made to ‘skills’ (26 occurrences). ‘Preparing’, ‘prepared’ and ‘ready’ were used almost interchangeably by respondents to refer to the process of preparing students for their future. If the occurrences of these three words are added together, their combined frequency is 62 responses. In addition to this, the most common phrase (16 occurrences) was ‘preparing students for the future’, or a similar iteration, e.g. students being prepared/ready for the future. On the surface it appears that a common understanding already exists between a number of staff; that the school’s role is to ‘prepare students for the future.’ However, this statement provides very little articulation beyond what is already implied by FR.

Multiple responses were given in addition to those discussed above. Some responses focused on the development of the moral characteristics of students, others considered lists of skills that students would need, while another group of staff responded with confusion or cynicism towards the FR tagline. To illustrate this diversity, a selection of nine staff responses to Question 1 have been included.

Q1. Kristin School’s tagline is ‘Future Ready’. Please define what you think this means.

These responses focused on the development of students who will make a positive impact in the world:

1. Providing young people with skills, dispositions and knowledge to be lifelong learners and positive contributors, able to make the most of their life and fulfil their dreams and tackle world issues to make the world a better place.

2. Developing a community who are prepared to be independent and creative, good people who will support each other.

3. Preparing students with a holistic approach to be positive contributors to families, communities, countries and the world once their life at Kristin ends.

Other responses listed the skills that they felt were necessary to be FR:
1. Developing skills that will enable students to integrate into any situation with which they come into contact with - Skills such as: digital ability, being able to relate and work positively with anyone, persisting when faced with adversity, motivating oneself and others, receiving and giving positive feedback, ability to problem solve, being resilient, responsible citizen, etc.

2. Students who are adaptable, flexible, savvy with technology, critical thinkers, evaluative researchers, but above all embrace and seek change.

3. Preparing students to cope with change in the future, such as being creative, problem solvers, resilient, entrepreneurs and global citizens.

While others showed confusion or cynicism towards the tagline:

1. I’m really not sure. It could mean in the use of technology in a changing world, or preparing children for the future as citizens. Can we ever be ready for the future when we don’t know what that will be like?

2. I think it implies that as a school and as students we are already ready for anything the future can throw our way. Personally I don’t like it as I believe as an educator we are developing students towards that goal/desire, we haven’t already achieved it.

3. Marketing-speak = “We’re great.”

The broad range of responses illustrates the multiple interpretations of the tagline held by staff. The literature in this area (DuFour & Eaker, 1998; Gabriel & Farmer, 2009) suggests that there can be a lack of understanding and staff buy-in if the process of creating new mission statements, taglines, vision statements et cetera is not inclusive of all stakeholders. “Vision statements that have been created in a rush by a small group of individuals with no input from other stakeholders […] are rarely understood or acknowledged by others in the school” (Gabriel & Farmer, 2009, p. 47). While this refers to vision statements, the same expectation should be held for a tagline if it is expected to have any impact within the organisation.

Following on from this question, staff were asked two follow-up questions to determine whether they felt that Kristin staff have a shared understanding of the FR tagline, and whether they believe this is necessary. Even more telling than the diverse definitions of FR were the staff responses to these questions, which are illustrated in Figures 2 and 3 below:
Figure 2. Staff responses to question 8.

Figure 3. Staff responses to question 9.
In response to Question 8, ‘Do Kristin staff have a shared understanding of the Future Ready tagline?’, 39% of respondents said yes, 32% said no, and 29% were unsure. Further to this, when asked ‘Is it necessary to have a shared understanding of the tagline?’, 81% of respondents said yes, 7% said no and 11% were unsure. The majority of staff survey respondents said it is important to have a common understanding of the tagline, and do not think/know if this is currently the case.

1.3 Rationale

Kristin School students attain excellent academic results in comparison to the national average. For example, 100% of graduating students in 2017 attained NCEA level 1 or above, compared to the national average of 88% (Ministry of Education, 2018). Over the last five years, an average of 91% of graduating Kristin students have attained University Entrance awards, compared to 40% of students nationwide (Ministry of Education, 2018). While Kristin recognises the importance of academic excellence, if the sole purpose of a Kristin education was academic excellence leading to university entrance, then the school’s tagline change would have reflected this. The choice of the FR tagline indicates that Kristin is committed to providing an education that goes beyond the goal of academic excellence and considers the needs of students as they graduate into a rapidly changing world.

In 2017, NZ Talent published an open letter signed by over 100 New Zealand businesses, stating “We recognise that new jobs require new skills. We welcome a new generation of employees with diverse skills and talent […] we confirm that for a range of specific, skilled-based roles in our companies, we do not require tertiary qualifications” (NZ Talent, 2017, p. 2). The removal of tertiary qualifications as a prerequisite for certain jobs is a bold step, which has come about due to rapid changes in the job market. “As employment is increasingly redefined by technology and new skills, the job market needs to respond in new ways to find talent […] These new jobs need to be adaptable and offer applicants the ability to learn on the job. The pace of change is rapid (NZ Talent, 2017, p. 1).” The World Economic Forum’s ‘Future of Jobs’ report states that, “By one popular estimate, 65% of children entering primary school today will ultimately end up working in completely new job types that don’t yet exist. In such a rapidly evolving employment landscape, the ability to anticipate and prepare for future skills requirements, job content and the aggregate effect on employment is increasingly critical” (Leopold, Ratcheva &
Zahidi, 2016, p. 12). If the purpose of education is fundamentally shifting, it is of critical importance that schools are ready to explore what it means to be FR and respond accordingly.

1.4 Project support

The project was supported by Kristin School, and in particular, the Executive Principal. Financial resources were provided by Kristin for payment of workshop facilitators, which ensured that expert facilitators were available to lead the workshops. Workshop participants were excused from regular staff meetings that occurred at the same time as the workshops and permission was given to share information about the workshops at staff meetings. Advice and guidance were also given by the Executive Principal on the practical elements of the project.

1.5 Aim

The aim of my project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff. This was carried out through a series of professional learning workshops involving a group of diverse staff members. The workshops used a collaborative, reflective model that gave participants time to consider relevant research and reflect on its effects on, and application to, the Kristin context.

1.6 Research questions

To critically examine the impact of the project, the research objectives were:

1. To what extent does participation in a cross-faculty network of staff result in a collective understanding of a complex pedagogical concept, and how effective is a workshop approach in supporting this?
2. What was the professional and personal impact of this participation?
Summary of project context

Kristin School’s FR tagline is widely used in the school and community. However, it was introduced without staff consultation and its meaning is currently undefined. Staff therefore have differing opinions of what it means in theory and in practice. For the FR tagline to have an impact it must be acted upon. For staff to act upon it, a collective understanding must first be developed. The purpose of the project was to give staff the opportunity to develop a collective understanding of FR. This is a case study of how exposure to relevant research, coupled with interactions within a small group of colleagues, can impact and define the participants’ ideas about what it means to be FR. The project took place within Kristin School, an independent New Zealand school with approximately 1,600 students. It was supported by Kristin and the Executive Principal, who acknowledged the potential impact of the project and provided resources to ensure it had the best chance of success.
2. Literature Review

There are four sections to this literature review. A brief introduction to the ways FR has been defined elsewhere is followed by literature relating to the development of collective understanding. Following this, literature relating to future readiness in education is explored and the chapter concludes with literature focused on successful professional development.

While the aim of my project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff, the words ‘common,’ ‘collective’ and ‘shared’ are used interchangeably throughout this thesis. While ‘collective’ is the most fit for purpose, the project’s initial aim was to develop a common understanding, which was later changed to a shared understanding to better fit the project’s purpose. The Cambridge Dictionary defines ‘shared’ as ‘owned, divided, felt, or experienced by more than one person’ (“Shared,” n.d.). Through a further process of reflection on the aims of my project, I felt that ‘collective’ better encapsulated my aims. The Cambridge dictionary defines ‘collective’ as ‘of, or shared by every member of a group of people’ (“Collective,” n.d.). However, ‘common’ had already been used in the participant consent form (see Appendix 6) and ‘shared’ had already been used in the staff survey (see appendix 1). It is therefore necessary to state that ‘common’, ‘shared’ and ‘collective’ are used interchangeably, with the intended meaning of a ‘common/shared/collective understanding’ being, ‘an understanding shared by every member of a group of people.’

2.1 Future Ready: How has it been defined elsewhere?

The Oxford Dictionary defines ‘ready’ as an adjective meaning ‘fully prepared’ (“Ready,” n.d.), and ‘future’ as a noun meaning ‘events that will or are likely to happen in time to come’ (“Future,” n.d.). By joining these two definitions, FR can be defined as being ‘fully prepared for events that will or are likely to happen in time to come’. This definition is simple on the surface yet layered with complexity. While it would be misguided to assume that a simple definition can clearly articulate the meaning of a complex concept such as FR, it is possible to develop an understanding of its meaning and application within a given context. For the purpose of this study, the ‘future’ is defined as an individual’s post-schooling life. There are two main reasons for selecting this time period. Firstly, leaving ‘future’ undefined means it would be impossible to determine how to be ‘ready’ for every possible timeframe beyond the present.
Secondly, students’ post-schooling life was the time period referred to by many staff members in their definition of FR in the staff survey. As this is already an assumption held by many Kristin staff, it is an ideal starting point for considering what it means to be FR in the Kristin context.

In America, Future Ready Schools is a U.S. Department of Education initiative that aims to maximise digital learning opportunities within schools, with the aim of ensuring students are prepared for success in their post-schooling life. The ‘Future Ready pledge’ is a commitment by school leaders to implementing changes that will create a digital learning environment which supports the district’s vision for student learning (“Take the pledge,” 2017). EdTechTeam, an American company who provide professional development for teachers within the Future Ready Schools programme, state that “Future Ready means having a comprehensive approach to technology integration” (“Future Ready Schools”, 2017, p. 1). For schools in the Future Ready Schools initiative, FR refers to improved access to, and integration of, digital technology.

The Future Ready campaign in Massachusetts has a different interpretation of what it means to be FR. Instead of focusing solely on digital technology, the Future Ready campaign aims to increase the number of students attending and completing college courses and having successful careers, and build greater community support for school, high school and further learning. The Future Ready Massachusetts website states: “Future Ready means having the knowledge, skills and attitudes needed to complete further education and training that will provide access to the career of your choice” (“About Future Ready,” 2014, p. 1).

FR is also a term used by multiple organisations globally. In the private sector, WSP/Parsons Brinckerhoff Engineering Services use the term FR to describe their commitment to future-proofing the work they carry out. The company uses computer-modelling to best predict what the future world (temperatures, natural phenomena etc.) will be like, then develops engineering solutions that will meet the needs and stand up to the challenges of perceived future problems (Symons, 2017). Aurecon, an Australian engineering and infrastructure advisory company, also use the term FR to highlight the innovative nature of their business. Their website states, “Preparing your organisation for the future, to avail of its opportunities and to minimise its risks, is what being Future Ready is about” (“Future Ready introduction”, 2018, p. 1).

**Summary of literature relating to Future Ready’s definition elsewhere**
The FR tagline is used by many companies and educational organisations. In the private sector, FR means considering future challenges when developing solutions to today’s problems. In education, FR refers to the use of digital technology to enhance student learning, or preparing students for their post-schooling life through the development of necessary knowledge and skills. There are multiple diverse meanings of FR currently used by other schools and companies, however it is currently undefined within the Kristin context.

2.2 Literature relating to developing a collective understanding

In his 2012 book on business leadership, *GPS for your organisation*, Barnett defines a tagline as a “description in a few words (normally five or less) of what is special or unique about your organisation or what it provides (i.e., those few words that get to the heart and soul of your organisation’s DNA or differentiation in a way that will inspire your employees and customers)” (p. 90). The FR tagline is succinct and aims to differentiate Kristin School from other schools, but it is unlikely to be considered inspirational by staff who are unclear of its meaning. Barnett goes on to explain that a tagline will only be effective “if it is owned and lived out by the organisation’s CEO, leadership team and employees” (p. 91). For this to happen, it must be discussed, understood, and operationalised in a meaningful way.

A common feature of effective schools is that staff members, students and leadership are committed to, and have an understanding of the school’s core goals (Kezar, 2005). These goals can be shared through a school’s vision and mission statement, tagline, values and philosophy. I found a significant gap in the literature relating to the development of a collective understanding of organisation’s taglines and the impact that taglines can have. However, the literature relating to the development of a collective understanding in general, and regarding school vision statements specifically, is much broader. A tagline, like a school vision statement, will only have an impact if it is understood and acted upon. Therefore, the focus of the remainder of this section of the literature review is on the development of a collective understanding in general and of school vision statements in particular.

Hatch (2008) outlines three possible ways to develop a shared understanding within an organisation: technical approaches, collaborative approaches and leadership-based approaches. Taking a leadership-based approach relies on a charismatic, popular leader to articulate the
organisation’s mission “and to get other members to understand or at least “buy in” to their view” (Hatch, 2008, p. 2). Huffman (2003) refutes the rationale behind the leadership-based approach, arguing that imposing a vision on staff precludes genuine buy-in. Further to this, if a shared vision is imposed by a leader without genuine buy-in, when the leader leaves the organisation the shared vision will cease to have an impact (Collins, 2013). DuFour and Eaker (1998) believe that taking a collaborative approach, which requires the involvement of a wide range of staff in the process of developing a shared vision, will result in multiple benefits for the organisation, including staff members being able to articulate the shared vision. To better understand a collaborative approach, it is necessary to understand the different theoretical perspectives on collaboration.

Mäkitalo-Siegl (2008) compares the two main theoretical perspectives on collaboration, which are based on Piaget’s (1977) and Vygotsky’s (1978) ideas.

The Piagetian viewpoint focuses on the cognitive processes of individuals. According to Piaget, knowledge construction takes place when learners adjust their own cognitive knowledge structure to the current context by restructuring their knowledge or revising their concepts or by generating new knowledge. Piaget’s ideas have been adopted by the socio-constructive approach. Vygotsky’s (1978) ideas, again, were taken up by the socio-cultural approach, which highlights the nature of knowledge building and the roles of artefacts in collaborative knowledge building processes.” (Mäkitalo-Siegl, 2008, p. 5)

To understand collaborative knowledge-building processes in the context of group learning, it is necessary to explore the ways in which people adapt the artefacts of action and thinking within their own culture and society (Säljö, 2001). The socio-cultural approach maintains that learning and cognition occur both at the level of groups and communities and at the level of individuals (Stahl, 2005). Vygotsky’s theoretical perspective of collaboration focuses on the interactions between learners and the ways in which they use different artefacts and resources to build shared understanding and knowledge. Vygotsky’s work underpins Engeström’s Cultural-Historical Activity Theory, which was used as a framework for my project and will be examined in the Methodology chapter.

The Manaiakalani cluster of schools in Auckland, New Zealand, took a collaborative approach when they underwent a process to change the name of their cluster to better reflect their
community and aspirations of the student body. Staff, students, school leadership, kaumatua (Māori elders) and community members were involved in this collaborative process, which is summarised in the case study below.

Case study 1: The Manaiakalani cluster of schools

![Manaiakalani logo](http://www.manaiakalani.org/)

In 2007, a cluster of 13 schools known as the Tamaki Achievement Pathway underwent a process to rename their cluster to better represent their shared culture and vision. For many years, the school’s kaumatua, Ihaka Samuels, had shared the story of Maui-tikitiki-a-Taranga (Maui)’s journey to New Zealand to inspire the students. A great explorer, Maui used the Manaiakalani constellation to navigate his way from Hawai’i, on to the Pacific, and eventually to New Zealand. Russell Burt, convenor of the Manaiakalani schools cluster, writes “Maui and his use of Manaiakalani to guide his Waka Hourua (canoe) has strong historicity and is a remarkable example of blending wisdom, knowledge and technology to bring about a bright future in a land of hope” (Burt, 2015, p. 1).

Burt (2015) continues, “The fusion of ancient knowledge, creative courage and innovation are a powerful inspiration for Māori and Pasifika learners today as we emulate the actions and lives of the navigators” (p. 1). The name Manaiakalani, already familiar and meaningful to the students, teachers and community within the cluster, was chosen to represent the cluster after consultation with students, staff and the wider community. By placing a revered cultural hero at the centre of a school with a predominantly Māori and Pasifika student body, the cluster ensured that the name has relevance to its students. Beyond this, the name is used to symbolise the way that students hook into their learning. “Manaiakalani is a perfect
metaphor for our journey of discovery using digital learning tools as a hook and a guide to deliver the knowledge our children need to be successful citizens of the 21st century” (R. Burt, personal communication, May 4 2017).

To ensure that new staff members are aware of the meaning of the Manaiakalani name, part of the staff induction process is focused on teaching new staff about the history and meaning behind the name and the ways it inspires students and teachers within the school. When visitors arrive to tour the school, part of the greeting that students share makes reference to Maui’s journey, the origins of the Manaiakalani name and its use as a metaphor for how students hook into learning.

The name Manaiakalani is meaningful for a number of reasons: The process of selecting the name engaged all stakeholders; It is relevant to stakeholders as it is rooted in Māori and Pasifika history; It is meaningful as an educational metaphor as it refers to the use of modern technology grounded in ancient wisdom; it is significant as it challenges students to go deeper, to ‘hook’ into their learning, and to embrace digital technologies just as Maui once embraced modern technology to explore the unknown.

Part of the success of the Manaiakalani name is its relevance to the culture of the predominantly Māori and Pacific Islander student population of the schools. Kristin School has a diverse ethnic mix, and it is therefore unlikely that a tagline such as FR will be as culturally significant as a name such as Manaiakalani. In addition to this, Kristin’s FR tagline was selected before its meaning was explored, as opposed to being selected after a collective process which gave stakeholders in the Manaiakalani cluster a chance to explore its significance and relevance. In spite of these differences, there are many aspects of the process that the Manaiakalani cluster went through which can be used to inform this project. In particular, the engagement of multiple stakeholders, continued reference to the name and its meaning, and the way that new staff inductions ensure that all staff are aware of the history and importance of the name are ways to ensure a collective understanding is held by all staff.

When developing a shared understanding amongst a group, Puntambekar (2006) argues that all participants need to be encouraged to raise new topics, ask questions, and to respond to each other’s contributions. Active participation within a group where the outcome is not determined
from the outset gives participants ownership over the process and therefore the outcome. Dara-Abrams (2014) found that staff will be put off from the process of working to develop a shared understanding if they feel that the outcome is predetermined by management. “If there’s a lack of transparency […] this will interfere with developing a real shared understanding” (p. 3). She also found that when participants were unable to attend a meeting where the purpose was to develop a shared understanding, it was important for them to be able to access the same information shared and be able to see a summary of the notes, to ensure they are ready to participate in future meetings. This enables group members to have the best chance of successfully developing a shared understanding and ensures that all members feel equally involved and therefore invested in the outcome.

Wise, Stutchbury and Cooke (2016) argue that shared vision only impacts upon practice if everyone within the organisation has had a part to play in its creation. Research also suggests that teachers are more likely to support a school vision when it is the result of an authentic exchange of views among principals and teachers (Licata & Harper, 2001). Burnard and Dragovic (2014) argue that “Communal creativity results in a strong sense of communal pedagogical responsibility: the ability to reflect and respond to mutual learning processes that are beneficial to the whole community of learners” (p. 360). Schrage (1995) defines the act of collaboration as “two or more individuals with complementary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own” (p. 33). According to this definition, collaboration between a group with complementary skills can result in a shared understanding that surpasses the understanding of any individual within the group.

Bohm, who proposed a new form of dialogue known as Bohmian Dialogue, believed that it is necessary to share meaning, as “the collective thought is more powerful than the individual thought” (1990, p. 14). Bohm emphasised the value of shared meaning, which “is obtained through dialogue and negotiation” (Puntambekar, 2006, p. 340). Shared understanding occurs as individuals take into account “each other’s perspectives in a social learning situation” (Puntambekar, 2006, p. 341). Barron (2000) argues that individuals must articulate their own personal understanding if collective understanding is to be reached. This is to ensure that discussion, negotiation and acknowledgement of a range of differing views occurs (Dillenbourg, 1999).
Stahl (2005) states that collaborative knowledge-building is not something that can occur instantaneously. Instead, it is the result of an ongoing process where individual perspectives are shared with the group and refined over time. This gives individuals the chance to reflect on their own views, consider those of others, then go through a process of negotiation to reach collective understanding. Through participation in this process, the “negotiated shared understanding becomes the learners’ tacit knowledge, available as a resource for building further new understanding” (Mäkitalo-Siegl, 2008, p. 7), or to serve as a catalyst for taking action.

Many of the findings from the literature reviewed thus far were put into practice by Viejo Elementary school, California, as they attempted to develop a shared vision statement for their school.

**Case study 2: Viejo Elementary school**

*Figure 5. Viejo Elementary School logo (Viejo Elementary School, 2017). Retrieved June 7, 2017 from https://vjes-capousd-ca.schoolloop.com/

In the 2005 article *From words to action*, Rion-Gaboury outlines the process that Viejo Elementary School in California went through to create a shared vision statement for their school. The article’s stated aim was to answer the question, ‘How does one go about developing a shared vision so that it becomes accessible and authentic to teachers and the school community at large?’ From the outset, the school leaders who instigated the process determined that all staff would be included in the process. Multiple staff meetings were set aside to engage staff in the creation of a collective vision statement. In the first staff meeting, staff were put into small groups that included teachers from each year level to ensure multiple perspectives would be shared.

Prior to the staff meeting, teachers had individually reflected on the school and its role as an educational institute. They completed a graphic organiser with three concentric circles which
had the headings, ‘What happens?’, ‘What matters?’ and ‘What matters most?’. In the staff meeting, teacher-leaders facilitated a discussion in their groups which centred around individual’s responses to the question, "What matters most?" The responses from this section were recorded and became the basis for the draft shared vision. Teachers were then given a list of 14 things that research has determined matter most in teaching, from Whitaker’s (2004) book, *What great teachers do differently: 14 things that matter most*. Along with each teacher’s own ideas about what matters most, the researched list was ranked by the staff and the top five characteristics were selected for inclusion in the draft shared vision.

After the initial staff meeting, year-level teaching teams were given time to process the statements in the draft shared vision. During a follow-up year level team meeting, each team spent time discussing their thoughts on the draft, after which they worked together to summarise the list into their own draft shared vision statement. These year-level shared vision statements were shared with all staff at the next staff meeting. The underlying premise to the statements was identified, and through further discussion a vision statement that encompassed the underlying premise of each year-levels draft was selected: ‘Today's Viejo scholars are tomorrow's successful citizens’ (Rion-Gaboury, 2005, p. 15).

At the following staff meeting, a Guided Language and Acquisition Design strategy was used to help the staff move from theoretical understanding of the vision to implementation. A T-chart with the headings ‘What does our vision sound like?’ and ‘What does our vision look like?’ helped teachers to envision what the vision statement might encompass in practice. Following this meeting, teachers went back to the typical aspects of their daily lives, and action resulting from the shared vision statement did not take place immediately. However, Rion-Gaboury noted, “As the new school year began and our work with creating the vision statement faded, I began to see evidence of sparks being lit around the school” (Rion-Gaboury, 2005, p. 37). This included teachers engaging with the community to enhance educational offerings; staff having higher expectations for all students; teachers producing quality content to be used in their own and other schools, and the principal making the vision statement visible within the school to ensure that it stayed at the forefront of staff’s thinking. “The principal displayed the vision for all to see as they walk through the front door of the school and promoted its proliferation throughout the school with encouraging e-mails” (ibid., p. 37).
Reflecting on the process and the outcomes that followed, Rion-Gaboury wrote, “through collaboration and effective communication, our vision statement had done much more than light our path. It unified and committed us to a common pursuit - successful students through a positive school climate” (p. 15). It was involvement in the process of developing a shared vision, rather than the one-line vision statement produced, that was significant in ensuring that the vision was truly shared. One of the positive side-effects of the vision creation project was that “the experience broadened the base of our leadership at Viejo Elementary to include many teachers who were content in previous years to watch rather than do” (p. 37). Rion-Gaboury felt that this was a direct result of including all of the school’s teachers in a process that is typically carried out by school leaders. “By broadening the leadership base to include their peers, teachers lit the spark that would eventually ignite into the creation of an action plan that would move us closer to realizing a school-wide vision and fostering a positive school climate” (p. 15).

In the case of Viejo Elementary School, the leadership team acknowledged the need for all staff to be involved in the process of the development of a shared vision. Lambert (2003) explains why principals should engage all staff in the creation of shared vision, rather than deciding on the school vision themselves: "A principal's vision, standing alone, needs to be 'sold' and 'bought into.' By contrast, a shared vision based upon the core values of participants and their hopes for the school ensures commitment to its realization" (p. 6). Although research (DuFour & Eaker, 1998; Huffman, 2003; Wise et al., 2016) suggests that taking a collaborative approach can be a successful way to develop a shared understanding, as Viejo Elementary School and the Manaiakalani cluster have done, this is not always practised within schools. Huffman (2003) found that “school reform efforts have generally been unsuccessful in providing the leadership, understanding, and motivation needed to empower staff members to create the collective vision based on shared values” (p. 23). Principals generally employ a leadership-based approach, where they aim to get staff to buy-in to the “real” vision by using authority, persuasion or charisma (Huffman, 2003).

**Opposing views**

Licata and Harper (2001) argue that evidence in the school setting (Lonnquist & King, 1993; Louis & Miles, 1990) suggests that leadership and the involvement of teachers in the
development of school vision do not guarantee that staff will internalise shared aims and act to make them a reality (Barnett & McCormick, 2003, p. 57). Rather than involvement in the process of developing a shared vision, a study of four principals and eleven teachers found that a positive relationship between school leaders and teachers is a strong determinant of whether staff will act upon a shared vision (Barnett & McCormick, 2003). Further to this, Berson, Shamir, Avolio and Popper (2001) argue that vision needs to be grounded in practicality, as it otherwise runs the risk of being viewed by staff as unrealistic or wishful thinking.

**Summary of literature relating to developing a collective understanding**

The literature shows that collective understanding is developed through a collaborative process. The greater the level of involvement that staff had in the process of developing a collective understanding, the higher the likelihood was of them acting upon their new understanding. Further to this, for a collective understanding to remain impactful, it needs to be brought to the forefront of the organisation, by regularly sharing the understanding with all stakeholders, including those new to the organisation. To ensure that shared understanding is acted upon, strong relationships between staff and leaders are also necessary.

**Application to project**

The successful creation of a new vision statement at Viejo Elementary School provided a number of key ideas for my project. The process of developing a vision statement started by determining the prior knowledge of the staff. Staff shared their own knowledge about what matters most in teaching, then had their thinking scaffolded by reading literature on effective practices in teaching. By focusing on research-based practice, the staff leading the new vision statement process were able to shift the conversation and ideas from teachers’ opinions to evidence-based pedagogy, while still valuing the initial ideas brought forward by the staff. This action occurred in accordance with the findings of Mercer (2003), who argues that shared understanding begins with shared knowledge, which functions as a common frame of reference for the group.

Staff were initially grouped across year-levels, ensuring that heterogeneity and diversity of opinion existed within each group. This grouping later changed so that staff could discuss the draft statements in their homogenous year-level teams. This may have given staff a greater
opportunity to be open and honest about how they felt about the draft statements, as staff generally meet with their year-level teaching peers more regularly than those in other year-levels. The time between meetings afforded staff the chance to reflect on the process and internalise and contextualise the outcomes. Multiple meetings ensured that all staff were able to be part of the process, which ensured that the entire staff was invested in the outcome.

The key principle guiding the selection of a vision statement that the staff agreed upon was that the statement should summarise the underlying understanding of all parties involved. Rather than trying to write the exact words in the statement early in the process and then refine it, the staff instead worked to make the underlying understanding visible, which in turn brought about the agreed upon vision statement. Finally, the Viejo Elementary School case study showed that involvement in the process was more valuable than the product. Involvement in the process acted as a catalyst for action, as staff internalised what was learned and put it into practice within their individual contexts. The school leadership team allowed action to arise organically from involvement in the process, rather than getting staff to explain what action they’d take based on the new vision statement, and then following up on this over time. While taglines and vision statements are only valuable if they are acted on, forced action is generally less effective, and less sustainable in the long run, than action resulting from an individual’s own desire for change (Sankey and Machin, 2014).

My project was informed by the literature and in particular by the Viejo Elementary case study. It engaged a diverse group of teaching and support staff working within the same organisation and gave them the opportunity for deep discussion and debate with their colleagues in a workshop setting. The workshop group met regularly and had the chance to speak within workshops and informally. Workshop participants had their thinking shaped over an extended period of time, and focused on the development of a collective understanding before focusing on ways in which they could operationalise the understanding reached.

2.3 Literature relating to future-readiness in education

Multiple studies have been carried out to determine the key competencies that students need to develop for future employment success (e.g. Robles, 2012; Kuijpers, Schyns & Scheerens, 2006; Pellegrino & Hilton, 2012). However, different studies have reached different conclusions. For example, Robles (2012) found that the skills that business executives perceive
as the most important for career success are integrity, communication and courtesy (p. 1). However, Kuijpers et al. (2006) found that career control and networking are the factors most strongly associated with career success (p. 1). These differing conclusions may have been reached due to the time between the studies, as the skills needed for career success are changing quickly. Beyond the task of defining which skills are necessary for career success, the field of future readiness in education focuses on ways in which students can be educated to be able to face the challenges of a changing world. However, research is based upon a constantly changing, amorphous body of knowledge. Conclusions drawn are based on an understanding of the current world, so their application to the future world is speculative at best. Due to the time constraints of the project, it was necessary to select key areas rather than attempt to cover the multitude of areas which could be encompassed by the FR tagline. The issues that are most relevant within the Kristin School context are the focus of this section of the literature review.

The literature in the area of future-focused education suggests that the model of education developed in the Industrial-age education system was effective in preparing students for employment in factories where jobs were repetitive and life was predictable, but that this model is no longer adequate to prepare today’s students for their future (Brynjolfsson & McAfee, 2012; Gilbert, 2015). Gilbert (2015) argues that “our education systems evolved to meet the needs of an earlier time - which is now over” (p. 1). Preparing students to succeed in an unknown, constantly changing world is a new challenge, and one of critical importance. According to Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, “We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before” (Schwab, 2016, p. 1).

There is a broad range of literature focused on predicted future ‘mega-trends’ (Brynjolfsson & McAfee, 2012; Snyder, 2013; Weinberger, 2011) in the world beyond education. The term ‘mega-trends’ is used to “describe structural changes in society. They influence all aspects of society and have a long-lasting effect” (Grohmann, n.d., p.1). The convergence of mega-trends such as the digital revolution, automation and ‘wicked problems’ such as climate change are already having a profound impact on the world, and their impact is predicted to increase over time (Weinberger, 2011).
From the literature reviewed, two mega-trends that are the most relevant to the Kristin context were selected. These two mega-trends, the digital revolution and wicked problems, are explored first. This is followed by a focus on tools to address wicked problems and the 21st century skills necessary for students to succeed. This section concludes with a review of the literature on how the digital revolution has affected student wellbeing. As the focus of this paper is the development of a collective understanding rather than defining FR, this section of the literature review is concise and includes only key points relevant to the Kristin context.

2.3.1 Digital revolution

The digital revolution refers to the shift from analogue electronic technology to digital electronic technology. From the beginning of the digital revolution in the late 1950s to the present day, the world has undergone a series of profound changes that have affected global society. The digital revolution has impacted all spheres of life including employment, urbanisation, economics, connectivity and entertainment. Rapid improvements in computing technology have helped to bring about these changes. Moore’s Law, which was first proposed by Intel co-founder Gordon Moore, says that “computing power tends to approximately double every two years” (Templeton, 2015, p. 1). The exponential growth in computing power, coupled with decreasing costs of production, has resulted in many changes that have irreversibly changed the global society, such as the wide-reaching automation of jobs, the rise of artificial intelligence (AI) and the global proliferation of personal devices such as smartphones, laptops and tablets.

Each of these digital technologies has had both positive and negative impacts. While automation has reduced costs of production and increased productivity, it has also resulted in job losses (Williams, 2018, p. 2). AI has reduced the need for humans to engage in mundane tasks but has also resulted in reduced employment opportunities for some workers (Ruocco, 2017, p. 3). Both automation and AI will have an impact on the lives of those currently in a Kristin education, in terms of employment prospects and future career choices. However, the digital revolution’s greatest impact on youths today is the ubiquity of and access to personal devices such as mobile phones, iPads and laptops. The impact of the use of these personal devices is discussed in section 2.3.4.
2.3.2 Wicked problems

Wicked problems are defined as “very complex problems that are difficult or impossible to solve, or even define, using the tools and techniques of one organisation or discipline” (Bull & Gilbert, 2012, p. 4). International drug trafficking, social injustice and climate change are examples of wicked problems. Wicked problems such as climate change affect global citizens to varying degrees. However, wicked problems can also be considered within local contexts. Bolstad (2011) suggests that schools need to educate students to better address wicked problems. She argues that this can be achieved by seeing their local environment as full of wicked problems:

The second thing I propose educators can do more of is to recognise schools and the community as sites rich with “wicked problems” […] environmental problems are structurally anchored in society, and therefore have to be understood as community issues with conflicting interests at several levels: individual, social and structural. Thus, environmental education must help students to identify, expose and analyse all three levels of conflicting interest, and how they affect the environment, so that they might take actions that address the root causes of environmental issues (p. 16).

Bolstad (2011) argues that focusing on wicked problems within local environments will give students real-life experience in working through the issues that cause these problems to arise and will help them to examine the multiple perspectives involved in attempting to find positive ways to address them. Viewing problems from an individual, social and structural level leads to a deeper understanding of the problem, which can then be used when addressing the underlying issues that have caused the problem to arise. Through these experiences, students will develop the skills necessary to collaborate with others in multiple fields of expertise to address the wicked problems of the future. Berger and Johnston’s (2015) book, Simple habits for complex times, details the way that leaders can lead during complex times, and shares a set of tools to help them do this. Two of the tools described are useful when attempting to address wicked problems. These tools are called ‘adaptive learning’ and ‘taking multiple perspectives’ and are described in the Methodology chapter.

2.3.3 21st century skills
In the literature reviewed, the term ‘21\textsuperscript{st} century skills’ often referred to the knowledge, skills, dispositions and work habits that are deemed to be of critical importance for success in the 21\textsuperscript{st} century workplace. However, the Glossary of Education Reform (GER) (2016) notes that there is no universally accepted definition of 21\textsuperscript{st} century skills. “It should be noted that the 21\textsuperscript{st} century skills’ concept encompasses a wide-ranging and amorphous body of knowledge and skills that is not easy to define [...] While the term is widely used in education, it is not always defined consistently, which can lead to confusion and divergent interpretations” (GER, 2016, p. 1). These ‘divergent interpretations’ were explored by comparing three studies (DiBenedetto & Myers, 2016; Pellegrino & Hilton, 2012; SCANS, 1991) which aim to define which 21\textsuperscript{st} century skills are necessary for learners to develop to succeed in the 21\textsuperscript{st} century world. The Secretary’s Commission on Achieving Necessary Skills (SCANS) was established to determine the demands of the American workplace, and to work out whether the future workforce would be capable of meeting those demands. The Commission’s first report, “What Work Requires of Schools,” was published in 1991. While less relevant for today’s students, the lists of skills detailed in the SCANS report have been used as a starting point for more recent studies of 21\textsuperscript{st} century skills (Bielaczyc & Collins, 1999; Collins & Halverson, 2009) and the study serves as a baseline to compare these more recent studies to.

In 2012, the Committee on Defining Deeper Learning and 21\textsuperscript{st} century skills was established, and the authors were tasked with defining the set of key skills referred to by labels such as 21\textsuperscript{st} century skills and College and career readiness (Pellegrino & Hilton, 2012). The authors argue that knowledge and skills are intertwined, so the term “skills” alone is not reflective of what learners need in the 21\textsuperscript{st} century. Instead, the study used the term competencies rather than skills to better reflect this understanding. To organise the different 21\textsuperscript{st} century skills, three domains of competence were identified: the cognitive domain, the intrapersonal domain and the interpersonal domain. A content analysis of existing lists of 21\textsuperscript{st} century skills was conducted, and these lists were categorised into clusters of competencies. Most recently, DiBenedetto and Myers (2016) used the results of a literature review to identify and determine a framework for the knowledge, skills and learning dispositions students need to have when they graduate high-school, so that they are ready to succeed in tertiary education or in the 21\textsuperscript{st} century workforce. As well as identifying these, the study also created a framework for a systems approach to developing these college and career ready skills. The three selected studies reached different conclusions, making them an ideal starting point for the workshop group to discuss to try to determine which 21\textsuperscript{st} century skills are necessary for a Kristin student to develop to be FR.
2.3.4 Wellbeing

Layard, Clark, Cornaglia, Powdthavee and Vernoit (2014) found that, “The most powerful childhood predictor of adult life-satisfaction is the child’s emotional health” (p. 1). Emotional health is one of the facets of overall human wellbeing. The term wellbeing is an abstract concept without one agreed upon meaning, so is therefore difficult to measure. Research generally views wellbeing through a hedonic or eudaimonic lens. Wellbeing is determined by Hedonic theorists along a pleasure vs. displeasure continuum while Eudaimonic psychologists measure wellbeing by how people live and the ways they find fulfilment (Ryan & Deci, 2001).

The use of digital technology has a strong influence on wellbeing (Ellison, Steinfield, & Lampe, 2007). The use of personal devices has increased rapidly in New Zealand in the last decade. In 2015, 70 per cent of New Zealanders owned a smartphone, up from 48 per cent just three years earlier (Research New Zealand, 2015). Further to this, 90 percent of teens had access to a smartphone at home (Ministry of Education, 2015). A 2017 Netsafe survey of 1,001 New Zealanders aged between 14 and 17 found that a third of New Zealand teenagers spend at least four hours online in an average day, with a further 38% spending two to four hours online each day. Further to this, 40% of New Zealand teenagers are active users of at least 5 social media platforms (Netsafe, 2018).

Much academic research has focused on the positive and negative impacts of social media technologies (SMT). The impact of Social Networking Sites (SNS) on student wellbeing is of particular importance due to the large number of secondary school students who use these sites. SNS are defined as “websites which make it possible to form online communities and share user created content” (Kim, Jeong & Lee, 2010). Facebook, the world’s largest SNS has over two billion monthly active users (Mosh Social Media, 2017). Some positive mental health benefits from the use of SNS have been recorded, such as increases in social capital via wider social networks (Ellison et al., 2007). However, while the average number of Facebook friends is 338 (Smith, 2018), and virtual connections may take place at any point in time regardless of physical location, a sense of isolation is widely perceived (Rotondi, Stanca & Tomasuolo, 2017). Although the number of connections is increasing, a reduced depth of connection has resulted in the formation of superficial relationships. Further to this, other studies have highlighted the risks associated with the use of online SNS, such as cyber-bullying, social isolation and exploitation (Juvonen & Gross, 2008).
A study that compared the health and wellbeing of secondary school aged youths in NZ between 2001 and 2013 reported mixed results (Clark et al., 2013). While many improvements in youth wellbeing were reported (a reduction in substance abuse and violence), increases in significant depressive symptoms and bullying amongst youths was also reported. The study found that in 2012 “some students received nasty or threatening messages over the past year on their mobile phone (12%) and/or on the internet (9%)” (p. 26). Further to this, the report highlighted the way that cellphone use can increase the effects of bullying, as bullying can continue beyond the physical confines of a school, and can continue wherever students have their phone/electronic device. Mathur and Freeman (2002) argue that “children today require more support, training and coping skills to prepare them for a more complex and technologically advanced society” (p. 695-696). It is therefore of significant importance to explore the factors that lead to greater wellbeing in children and youths to prepare them for this future.

Summary of literature relating to future-readiness in education

The world that our education system was designed for has changed, and the literature is clear that our education system needs to adapt to meet these changes. The digital revolution has had a significant impact at both a global and individual level. Wicked problems such as climate change are not new, but are greater in scope and size than in previous generations, and can only be addressed through cross-disciplinary collaboration and new ways of thinking. To do this, students need new skill-sets known as 21st century skills. Due to the volatility, uncertainty, complexity and ambiguity of a world characterised by wicked problems, the exploration of ways to improve student wellbeing must be a high priority for schools to ensure students go on to experience high levels of life-satisfaction.

Application of future-readiness literature to my study

Of the themes that emerged from the literature, the two most relevant to the Kristin context were selected for further exploration. These two themes (the digital revolution and wicked problems) and their impact on the education sector and students were explored through a professional development (PD) intervention. A series of six workshops was designed to allow participants to explore these areas and synthesise their findings within the Kristin context. 21st century skills were explored in one workshop (21st century skills), and the digital revolution
and its effects were the focus of two workshops (Digital fluencies and Student wellbeing). Wicked problems and tools to address them were also explored in two workshops (Wicked problems and Future-oriented teaching and learning).

2.4 Literature relating to Professional Development

In the education sector, professional development (PD) usually refers to “a formal process such as a conference, seminar, or workshop” with the purpose of “improving learning for educators and students” (Mizell, 2010, p. 5). As the aim of my project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff, it was necessary to examine the literature regarding the elements of successful PD to ensure that the intervention planned had the greatest chance of success. According to Grundy and Robinson (2004), PD serves three distinct functions: extension, renewal and growth (p. 51). Participation in PD is either initiated by an employee’s organisation (mandatory PD) or the employee themselves (non-mandatory PD). Where an organisation requires an individual to attend, PD typically serves the function of renewal. When PD is initiated by the employee, it may serve all three functions (Grundy & Robinson, 2004).
2.4.1 Participation in PD

Sankey and Machin (2014) researched the reasons why employees choose to participate in non-mandatory PD, and the effects of this choice to participate. When PD was mandated, they found that employees generally exhibited lower levels of motivation to attend. Motivation concerns “what moves people to act, think, and develop” (Deci & Ryan, 2008, p. 14). Lower levels of motivation affect employees’ willingness to engage with the content offered during PD, and to transfer what was learned to the workplace after PD has been completed (Feldman & Ng, 2012). In the case of non-mandatory PD, they found that employers expect employees who attend non-mandatory PD to be active participants as they have exercised choice about participation. Deci and Ryan (2008) found that employees attending non-mandatory PD could articulate a compelling personal reason to participate.

Whilst participation in non-mandatory PD is initiated by the employee themselves, organisations also have input in this decision. Financial resources are often required, and attendance often requires employers to release employees from their normal work duties. Therefore, non-mandatory PD should not be seen as completely voluntary, but can be better viewed as a self-initiated action that is endorsed by employers (Feldman & Ng, 2012). When participation is self-initiated, employees are more likely to implement what was learned and to feel a greater sense of responsibility to take action (Deci & Ryan, 2008).

Sankey and Machin (2014) concluded their study by stating, “when employees are autonomously motivated to participate in non-mandatory PD, the most salient aspiration and influence on transfer implementation intentions is intrinsic benefits [...]. The practical implications of the study are that when employees are proactively supported in their personal interests and choice of PD, with the intrinsic benefits of these activities highlighted, they are likely to make a commitment to implement strategies to facilitate the use of what they learn – an important initial step in the transfer process” (p. 241).
2.4.2 Characteristics of effective PD

A number of studies have summarised the important features of effective PD (e.g. Day, 1993; Garet, Porter, Desimone, Birman & Yoon, 2001). The features Garet et al. (2001) found that contribute towards effective PD are content focus, active learning, coherence, duration and collective participation (p. 916). These features are implemented in different ways depending on the intervention, and different features are more/less relevant in different types of PD. The implementation of these features should be determined by the specific goals of the PD and the context in which the PD is implemented. Maandag, Helms-Lorenz, Lugthart, Verkade and van Veen (2017) argue that PD will only have a positive and enduring impact if it is fit for purpose. Therefore, “the intervention goals should determine the choice and design of the intervention… Backward Design seems to play a central role: thinking from the goal to be achieved with a professional intervention, determines the intervention activities and a relevant selection is made of effective features” (Maandag et al., 2017, p. 65).

Kennedy (2016) argues that there is a need for those designing PD to determine a ‘theory of action’. A ‘theory of action’ is a consideration of “the reasons why the intervention would contribute to the learning of teachers” (Maandag et al., 2017, p. 65). Further to the findings of Kennedy (2016), Maandag et al. (2017) recommend that those designing PD interventions should “focus not so much on the specific effective features, rather how they are combined in a theory of action” (p. 66).

Day (1993) argues that PD within schools is usually “related to directly applicable practical classroom-centred needs” (p. 88). He goes on to state,

If the primary purpose of PD is to encourage learning, to develop and enrich the thinking, cultures and practices of individual teachers and their schools for the practical benefits of their students, then it is vital that it is prevented from becoming parochial and insular. Long-term development must not be sacrificed for solution-oriented 'quick fix' training [...] Teachers' thinking and action at all levels and the contexts in which they occur should be challenged and supported. (Day, 1993, p. 88)

Day (1993) approaches PD from a socio-cultural perspective. One of the underlying beliefs shared is that individuals’ psychological, social and career life histories all shape their attitudes,
expectations and behaviours. Because of this, individuals cannot be separated from the social
and cultural context in which they operate. To plan successful PD interventions, the socio-
cultural beliefs of participants, and the environment in which PD occurs, need to be taken into
account.

Day (1993) states that reflection alone is not an effective feature of PD. He claims that there is
a “need for reflection to be accompanied by confrontation if development is to occur” (Day,
1993, p. 1). Often, external intervention is required for this confrontation to occur, either upon
the individuals involved or the system as a whole. In accordance with Maandag et al. (2017),
Day (1993) found that effective PD must be fit for purpose and noted that the purpose will
determine both the length, frequency and type of PD required. Further to this, he states that the
support of management through the provision of human and financial resources will also impact
the success of an intervention. Extrinsic rewards, such as accreditation, and intrinsic rewards,
such as professional growth, were also found to influence the level of motivation of participants.

Maandag et al. (2017) and Day (1993) agree that each of the factors that contribute to effective
PD interact in different ways upon individuals and groups involved in PD. As PD involves
humans with differing needs, not all of the features of effective PD will be present at any given
time within a PD intervention and not all participants will have the same needs. Therefore, it
follows that effective PD “is multidimensional” (Day, 1993, p. 88) and the exact design depends
on the purpose of the intervention.

A study carried out in New Zealand by Gilbert, Bull, Stevens and Giroux (2015) aimed to find
out whether a ‘step-change’ in teacher thinking is possible. The PD intervention aimed to build
the participating teachers’ thinking capacity, moving teachers from one step of intellectual
capacity to another, e.g. the ‘socialised mind’ to the ‘self-authored’ mind. This ‘step-change’,
a complete change in the way teachers think rather than a change in the way they do what they
already do, occurred for about a third of the participants.

The study’s conclusions affirm the importance of the features of active learning and collective
participation proposed by Garet et al. (2009). The need to view participants through a socio-
cultural lens which sees them as individuals with differing psychological, social and career life
histories which shape their thought patterns, proposed by Day (1993) is also affirmed by the
study, which concludes:
1. A “21st century-ready” teaching workforce needs to think differently, and support is required if this is to happen.

2. Future-oriented teacher PLD (professional learning and development) should be less about offering pre-packaged, one-size-fits-all solutions designed to add knowledge and skills into teachers’ existing databases, and more about developing teachers’ capacity to think and work effectively in the increasingly uncertain, complex and change-oriented world of the future.

3. Teachers need more opportunities to participate in sustained collegial debate, to engage with ideas at a deep level, beyond what is possible in the congeniality of staffroom conversations, or the filtered space that is social media, and to be comfortable with uncertainty and not knowing.

   (Gilbert et al., 2015, p. 12)

Note: selected quotes included - see p. 12 for complete summary

The conclusions of Gilbert et al. (2015) go beyond those of Day (1993) and Maandag et al. (2017), as they refer specifically to future-oriented PD. Gilbert (2015) suggests that “new ways of thinking are required. If education is viewed as a complex system, then a good start would be to develop strategies that focus on (i) maximising the “quality” of all the elements in the system, and (ii) maximising the number, density and depth of interactions between the elements” (p. 5).

2.4.3 Transfer of learning to the workplace

Sankey and Machin (2014) argue that the human and financial resources used for PD are only effective if employees learn during PD, then implement what was learned when they return to their workplace. If employees act in new ways and maintain this action over time, organisations will benefit from the PD learning that occurred. Sankey and Machin (2004) argue that improved organisational outcomes are one of the positive impacts that successful PD should have. There are many complex factors that affect the transfer process (whether PD learning is transferred to the workplace). These factors are influenced by what happens before, during and after participating in PD (Machin, 2002).

At each of these stages, personal motivation plays a critical role (Beier & Kanfer, 2010).
Prior to participation, motivation influences employees’ choice to pursue development opportunities. During activities, self-regulatory processes (e.g. self-monitoring, self-evaluation) influence the degree of effort employees apply to learning and performance” (Sankey & Machin, 2014, p. 242). After participation in PD, transfer motivation is a factor that determines whether knowledge and skills learned will be used in the workplace (Beier & Kanfer, 2010). The factors that affect motivation prior to, during and after PD are complex, and researchers suggest that there is a need to undertake further study to better understand these factors (Grossman & Salas, 2011).

Summary of literature relating to effective PD

The effectiveness of PD is determined by a number of factors. Motivation of participants at each step in the PD process (before, during and after) is a strong determining factor. The design of the PD is another key determinant. PD must be planned through a Backward Design process with the goals of the PD determining the format used. PD needs to give participants the opportunity for sustained collegial debate and to engage with ideas on a deep level. Rather than seeing participants as a homogenous group, the socio-cultural history of participants needs to be considered and PD should be planned accordingly. The research literature is clear that there is no one “correct” way of going about PD, but that instead the aim of the PD should be the key consideration when planning PD.

Application to study

The aim of my project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff. As the literature suggests, I kept this aim as my key consideration when designing the PD intervention. A description of the ways in which the PD literature influenced my research design is explained in the Methodology chapter.
3. Methodology

People and organizations are all the time learning something that is not stable, not even defined or understood ahead of time. In important transformations of our personal lives and organizational practices, we must learn new forms of activity which are not yet there. They are literally learned as they are being created. There is no competent teacher. Standard learning theories have little to offer if one wants to understand these processes (Engeström, 2001, p. 137-138).

3.1 Introduction

This chapter outlines the methodology undertaken in this research project. My research position, research methodology and a theoretical framework for the project will first be outlined, followed by an explanation of my research methods and the forms of data collection used. Finally, issues of validity and reliability will be considered, along with an outline of ethical considerations that have been addressed. The project reported on in this thesis involves the development of a collective understanding of a New Zealand school’s tagline by a group of diverse staff members. As outlined earlier, the project was guided by the following research questions:

1. To what extent does participation in a cross-faculty network of staff result in a collective understanding of a complex pedagogical concept, and how effective is a workshop approach in supporting this?
2. What was the professional and personal impact of this participation?

3.2 Research position

Before explaining my chosen methodology, it is important to outline my ontological and epistemological position, as these directly influence the methods chosen. Bracken (2010) argues that it is important for the researcher’s ontological and epistemological positions to be closely aligned with the methods selected for data gathering and interpretation. This is because the ontological position of the researcher affects the ‘filters’ individuals apply to their world (Dilts
& DeLozier, 2000). Therefore, it is necessary to be aware of the ‘filters’ that have influenced my research choices and interpretation of data. My epistemological view is that knowledge can be developed in social contexts. Goldman (1999) and Kotzee (2013) refer to this as ‘social epistemology’. Kotzee (2013) argues that “one may best understand how to foster the growth of knowledge by thinking about those social institutions” (p. 2).

In accordance with socio-cultural theory, it is my belief that answers to my research questions can be found in the social context in which the research occurs, which is made up of Kristin School and the staff it employs. There are two main approaches to social science: an interpretivist and a positivist approach. A positivist approach sees social phenomena as existing in isolation; that is, they are seen to exist separately from the actors within it (Bryman, 2008). Positivism states that social phenomena can be researched in the same way physical phenomena can be through the use of laws and theories (Cohen, Manion & Morrison, 2007). In essence, it is an “epistemological position that advocates the application of the methods of the natural sciences to the study of social reality and beyond” (Bryman, 2008, p. 13) which is effective for research and testing on a wide scale. Positivism has been criticised due to its failure to account for the complexity of human behaviour. A positivist approach views human behaviour as “passive, essentially determined and controlled, thereby ignoring intention, individualism and freedom” (Cohen et al., 2007, p. 18). My research project took place within an education setting. Gilbert (2015) argues that education should not be viewed as a simple or complicated system, but rather as a complex system that needs to be managed accordingly. To understand a complex system using a set of general laws and theories, as a positivist approach suggests, would be misguided, as social phenomena are constantly changing (Davidson & Tolich, 2003). Organisations such as schools are too complex a setting for the positivist approach to take account of such complexities (Cohen et al., 2007).

A very different approach to positivism is interpretivism, which is focused on the “understanding of the social world through an examination of the interpretation of that world by its participants” (Bryman, 2008, p. 366). Cohen et al. (2007) suggest that interpretivist researchers are concerned with individual participants and the way in which they interpret and make sense of the wider world around them. The interpretative view argues that knowledge is gained through interaction within a social context as a whole, not in isolation. Interpretations of social phenomena are vital to any research involving human behaviour. In the case of my research, the workshop participants are my most important resource as I attempt to find answers
to my research questions. Their perspectives are individual and complex and are essential to understanding the factors that have enabled or prevented them from engaging with the process of developing a collective understanding. This view is in accordance with the stance outlined by Cohen et al. (2007) where they explain that, “the social world can only be understood from the standpoint of the individuals who are part of the on-going action being investigated” (p. 15).

A number of issues with interpretivism have been identified. The main issue is “centred on the validity of the information gathered and findings from research” (Edwards, 2011, p. 31). Positivists argue that interpretivist researchers “have no way of verifying” (Denzin & Lincoln, 2005, p. 8) the conclusions drawn from their research. This issue relates to reliability and validity, which is discussed in section 3.15.

3.3 Practitioner research

The use of an interpretive position has led to a methodology guided by practitioner research. Practitioner research has been described by a “plethora of terms” (Campbell & McNamara, 2009, p.10). McWilliam (2004) states that practitioner research exists in “any number of hybrid forms” (p. 113). Practitioner research is often used synonymously with terms such as teacher-research, practitioner inquiry, action research and action learning (Cochran-Smith & Lytle, 2009). Practitioner research differs from other more traditional forms of education research because it is undertaken by practitioners within their own work environment (Kemmis, 2006; Dadds & Hart, 2001). Practitioner research shares the following characteristics:

They view the practitioner as researcher; professional contexts are the sites of study; there are blurred boundaries between inquiry and practice; community and collaboration are important constructs; and they act to make new knowledge public and have this new knowledge lead to improved practice (Letts, 2013, p. 478).

Practitioner research serves a wide range of purposes. Middlewood, Coleman and Lumby (1999) suggest that its key purpose is to improve individual practice. It also serves wider professional practices and can bring about meaningful change within an organisation (Gitlin et al., 1992). Practitioner research provides benefits to participants by involving them in the process of shared learning which ensures they have ownership of the outcome. This contributes to their growth in knowledge, skills and understanding, which ultimately leads to school
improvement. Kemmis (2006) argues that practitioner research serves an altruistic purpose as it provides a way “of addressing important problems in thought and actions, in theory and practice [...] in and for our communities, in and for our shared world” (p. 471).

Differing opinions are held as to whether practitioner research should be defined as a collaborative undertaking. While many researchers support the notion that collaboration is an essential part of practitioner research, this is not a universally accepted view. Elliott (1998) argues that practitioner research must be “enacted by teachers collectively [...] rather than individually” (p. 183). Further to this, Groundwater-Smith and Mockler (2005) contend that collaboration is one of the “over-riding ‘ethical’ guidelines for practitioner research” (p. 6), and that it should be “collaborative in its nature and transformative in its intent and action” (p. 7). Opposing this view, Stenhouse (1975) and Whitehead (1985) believe that practitioner research does not necessarily have to be done in collaboration with others. Further to this, Cohen et al. (2007) believe that it might be “too restricting” (p. 301) to define practitioner research as a group activity. As the literature regarding effective PD suggests that a collaborative approach is most effective, this is the approach utilised within my project.

While there were benefits to my project from taking a practitioner research approach, controversy exists as to whether practitioner research constitutes ‘true research’. Oolbekkink-Marchand, van der Steen and Nijveldt (2014) question the ability of practitioners to undertake good research and share concerns about robustness in process. While some argue that research should only be carried out by academics with a sound knowledge of theory, Schön (1987) offers an opposing view. He argues that if there is a “separation of research from practice” (p. xi), the results of the research are not considered relevant to practitioners. Cochran-Smith and Lytle (1999) argue that the opportunity for dialogue with other teachers will generate theories grounded in practice, that are seen by teachers as more relevant than findings from university-based researchers. In my study there were advantages and disadvantages of carrying out practitioner research. Whilst the research was not carried out with the skill of a professional researcher, I had a much deeper understanding of the context in which the research occurred than a professional researcher would have. This benefitted the project as it made the research much more authentic and real-world.

As I am an employee of the organisation the research took place within, improvements made to my own practice, and those made by the workshop group, were of direct potential benefit to the
organisation where the research was carried out. Due to my leadership position within the organisation (Year 1 Dean), there was a chance that those I lead would feel compelled to participate. This possibility of participation based on compulsion was reduced by discussing the project with my team before it was advertised to give them time to consider whether they were interested in participating. Each of my team members chose not to participate, which ensured that I had no direct authority over anyone in the workshop group. This issue is discussed in greater detail in section 3.16 below.

Campbell, McNamara and Gilroy (2010) assert that practitioner research aims to bring about change. My project aimed to do this by developing a collective understanding of our school tagline, which will empower practitioners to make changes to their practice based on this new understanding. While practitioner research is not perfect (Coleman & Lumby, 1999) it has much to offer practitioners, such as the ability to empower them, to reinforce the idea that educators are self-regulating professionals, and to enable the inclusion of practitioner voice in the debates surrounding educational change (Kincheloe, 2012). As well as these benefits, practitioner research was chosen as it is a flexible and responsive methodology (Cohen et al., 2002).

3.4 Qualitative research methodology

My research methodology was predominantly qualitative in nature. Qualitative research methodology and interpretivism are strongly linked. Creswell (1994) suggests that this is due to the qualitative researcher's epistemological belief in the subjective nature of social phenomena, and that those within the social context of study actively construct the reality being researched. A qualitative research methodology was chosen as it supports the collection of “open-ended, emerging data with the primary intent of developing themes from the data” (Creswell, 2002, p. 18).

Qualitative research is explorative in nature, and focuses on the collection and analysis of data to better understand people’s opinions and motivations (Bryman, 2008). Various methods such as interviews, document analysis, observation and surveys can be used to accomplish this. The methodology of quantitative research was not used due to its focus on “quantification in the collection and analysis of data” (Bryman, 2008, p. 366). A quantitative approach aims to make connections between variables and use these to make generalisations to a wider population (Creswell, 1994). My research is more closely aligned to Creswell’s (1994) outline of a
qualitative approach, as it aims to make meaning within a particular context. The use of qualitative research methodology allowed my study to identify new understandings of ways a collective understanding can be developed within a school context. Whilst my research was primarily qualitative in nature, one quantitative tool was used. Simple numeric data was collected to better understand the level of confidence participants have when sharing their understanding of FR, and how their level of confidence was affected by participation in the workshop group.

The methodology of qualitative research is frequently used when conducting educational research. The qualitative approach offers greater flexibility as it is may be less fixed than the quantitative approach. This is a significant advantage for qualitative researchers as it allows them to “adapt [their] method as the subject changes” (Davidson & Tolich, 2003, p. 29). In a project centred on researching the development of a complex pedagogical concept, flexibility was necessary to allow the understanding between participants to develop organically. While flexibility was a strength for my project, quantitative researchers argue that flexibility can be a weakness as it causes a reduction in the level of rigour in the research methods. It is argued that this impacts the validity and reliability of the data collected and the conclusions drawn from this data (Davidson & Tolich, 2003).

Bryman (2008) suggests that qualitative research is not always transparent, as the ways in which a researcher draws conclusions of the study are not always clearly stated and easily understood. In spite of this criticism, Menter, Elliot, Hulme, Lowden and Hall (2011) argue that while qualitative and quantitative data can sometimes be ambiguous, the strength of qualitative data is that it allows for information to be more fully interpreted and understood within the context in which it occurred. As my research relied on workshop participants sharing their views, opinions and understanding, it was vital that the methodology chosen allowed me to explore widely and seek further clarification outside of the initial scope of the project if necessary.

3.5 Research framework

Engeström’s Cultural-Historical Activity Theory (CHAT) was used as the framework for this research, as it takes a socio-cultural approach and recognises the complex processes involved in human action and interaction. CHAT was initiated by Vygotsky in the 1920s (first generation), expanded on by Leont’ev in the 1970s (second generation), and further developed
by Engeström in the 1980s (third generation). CHAT examines the way that diverse groups of people who share an objective come together to work on new problems, and the process that leads to the development of new knowledge or tools to address those problems (Daniels, 2008; Engeström, 1999). The CHAT framework considers the role the community plays in making and interpreting meaning. It also considers the way in which tools are used in learning and communication, and how humans work together and learn by taking action (Foot, 2014).

![Activity system](adapted from Engeström, 1987).

An activity system takes into account the “complexity of the social situation and activity of people acting within it” (Burnard & Dragovic, 2014, p. 342). Rules that govern activity are taken into account, as well as the community or social setting in which activity takes place. Division of labour refers to the way that responsibility is shared amongst participants. Instruments (also called tools or mediating artefacts) mediate the ways in which the learners (the subjects) “experience and come to make sense of instrumental group learning (the object)” (Burnard & Dragovic, 2014, p. 342). The activity system provides a framework for analysis of the pedagogic practice that occurs within it.
Mukute (2009) states that learning within a CHAT framework takes place through internalisation and externalisation. Internalisation occurs when an individual makes sense of cultural capital in their social relations, thinking and actions (Mukute, 2009, p. 152). Externalisation occurs when groups create new knowledge or discover new solutions to problems. When learning involves both internalisation and externalisation it is called expansive learning (Engeström, 1999). The theory of expansive learning (Engeström, 1987) was developed within the framework of CHAT. Theories of learning usually focus on the process that a person goes through as they learn “some identifiable knowledge or skills in such a way that a corresponding, relatively lasting change in the behaviour of the subject may be observed” (Engeström, 2001, p. 137). These learning theories are effective if the knowledge or skills to be learned are clearly defined and do not change over time. For this type of knowledge, a “competent ‘teacher’ who knows what is to be learned” (Engeström, 2001, p. 137) can share their knowledge with the subject, who retains this knowledge, and therefore learns. However, Engeström (2001) argues that this is too simplistic a view of the learning process and that in reality many types of learning relate to “something that is not stable, not even defined or understood ahead of time” (Engeström, 2001, p. 137).

Expansive learning is focused on the creation of new knowledge. Metaphorically, expansion is a depiction of the multi-directional movement of learners as they construct and implement a wider, new, and more complex object for their activity (Sannino, Engeström, & Lemos, 2016).

This is done with the help of mediating means employed and built throughout the design process. Expansive learning can lead to qualitative transformations both at the level of individual actions and at the level of the collective activity and its broader context. When learners pursue and grasp instantiations of the expanding object of their activity, they also construct a new motive and new long-term engagement. (Sannino, Engeström, & Lemos, 2016, p. 603)
Third-generation CHAT expands on second generation CHAT by focusing on multiple activity systems and can be used to analyse the interaction between activity systems, rather than seeing activity systems in isolation (Roth & Lee, 2007). Activity is what the workshop group engages in as they attempt to co-construct a new understanding or collaboratively solve a problem. The key activity system in my project was the workshop group. This activity system interacted with two other activity systems (Kristin School and the Professional Learning community) with the shared outcome being the development of a collective understanding of FR. The use of CHAT offered a way of conceptualising the activity of developing a collective understanding, which took place through participation in a collaborative professional learning network interacting with other activity systems. A key benefit attained through the use of CHAT as an operationalised analytical framework is that it provides insights into the connections between internal thinking, workshop group thinking, and the connection between learning and action. The CHAT framework was chosen due to the complexity of the research aims and the environment in which the study occurred.
3.6 Interacting activity systems

The key activity system analysed by my project is the workshop group. The workshop group’s interactions can be better understood by taking into account the cultural-historical context in which they operate. This starts by acknowledging and attempting to understand the community they are based within. The six parts of the activity system are the community, subjects, instruments, rules, division of labour and the object.

In this activity system, the subjects of learning were the nine workshop participants. The instrument of concept maps was used by participants to show their changing and developing understanding of FR. The rules of the workshop group were based on collaborative practices including the need for participation and knowledge sharing to better understand each participant’s individual context. These collaborative practices are expected of all participants (division of labour). The object of the workshops was for participants to discuss, debate and synthesise ideas that are shared. The activity system of the workshop group interacted closely with two other activity systems. These two activity systems, Kristin School and the Professional Learning community, are shown and described below.
The aim of my project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff. Whilst the key activity system analysed was the workshop group, the wider school staff had multiple opportunities to participate within this process. Instruments such as videos and forum posts were used to allow staff to view all of the workshop presentations and interactions and the discussion forum enabled them to share their own feedback on the workshop content, or offer suggestions of what other areas could be taken into account when considering the meaning of FR. The subjects of learning were all teaching and support staff. As the project was a form of practitioner research and was not initiated by the school, any staff who chose to interact with the workshop videos and forum posts did so voluntarily. Whilst it was hoped that staff would interact with the content shared, there were no fixed rules or division of labour operating within this activity system. The object of learning for Kristin School was for staff to reflect on the video content, then share their own ideas and perspectives on the forum posts which would be considered by the workshop group in following workshops. The wider community, made up of staff such as relieving teachers, parents of current students, students etc. were considered when attempting to understand the interactions between the activity systems of Kristin School and the workshop group.
The final activity system analysed was the Professional Learning community (PLC). While this label encompasses a vast number of professionals (community), I have used this term to refer specifically to those within the field of education and areas closely related to this. Aside from the workshop facilitators, the influence of the PLC on my project has been very strong. The workshop content was based around findings from the PLC recorded in my literature review, and facilitators were selected based on their expertise within these areas.

Specific to this context, facilitators from the PLC were the subject of this activity system. The rules that governed the workshops were the expectation that they were to contextualise content within the Kristin context, and achieve this by first determining the prior knowledge of the workshop group in their area of expertise. Division of labour was shared equally amongst facilitators, who provided meaningful content to be discussed, and shared opposing views for consideration. These were carried out using the instruments of multimedia presentations, adaptive teaching and curious questioning techniques (as described in section 3.11.1). The object of this activity system was to share multiple perspectives on what FR could encompass, and to provide the means for workshop participants to consider these perspectives within the Kristin context.
**Workshop group**

**Object:** Discuss, debate, synthesise and share ideas

**Rules:** Knowledge sharing, participation

**Community:** Workshop participants

---

**Kristin School**

**Object:** Reflect on video content, feedback ideas and perspectives

**Instruments:** Videos, Forum posts

**Subject:** Teaching and support staff

**Community:** Staff, parents, students

---

**Outcome:**

Develop a Collective understanding of Future Ready

---

**Object:** Share multiple perspectives of what Future Ready could encompass

**Instruments:** Adaptive teaching, Curious questioning, multimedia presentations

**Subject:** Workshop facilitators

**Division of labour:** Provide meaningful content, encourage interaction, provoke opposing views

**Community:** Educational researchers, futurists, educational leaders

**Rules:** Determine prior knowledge, contextualise content
Figure 11. Interacting activity systems.

The three interacting activity systems are shown, with their individual objects coming together to form a shared outcome. The PLC’s object is to share multiple perspectives of what FR could encompass. The workshop group’s object is to discuss, debate and synthesise ideas shared by the PLC into the Kristin context. Kristin School’s object is for staff to reflect on video content, then feedback their own ideas and perspectives to be considered by the workshop group. The shared outcome of the interactions between activity systems is to develop a collective understanding of FR.

3.7 Workshop approach

As my project focused on the creation of new knowledge, it was clear that a lecture-style forum where ideas are imparted from speaker to participant would not meet the requirements for thinking in this area. No single expert has the answer to what a complex pedagogical concept like FR means within the Kristin context, so developing a collective understanding will not happen through passively listening to experts. Rather than follow a more traditional model of PD, where teachers with a common focus (subject area, year group etc.) attend PD and then return to the classroom with a plan to implement what was learned, I felt a different form of PD was required to meet the different purpose of my project. To determine the best approach for developing a collective understanding of FR within the Kristin context, I considered a number of approaches that are commonly used in education to conduct PD.

<table>
<thead>
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<th>Types of professional development:</th>
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<tr>
<td>• courses/workshops (e.g. on subject matter or methods and/or other education-related topics);</td>
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<tr>
<td>• education conferences or seminars (at which teachers and/or researchers present their research results and discuss education problems);</td>
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<tr>
<td>• qualification programme (e.g. a degree programme);</td>
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<td>• observation visits to other schools;</td>
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<td>• participation in a network of teachers formed specifically for the professional development of teachers;</td>
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<tr>
<td>• individual or collaborative research on a topic of professional interest</td>
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The literature on effective PD suggests that programmes need to maximise opportunities for participants to interact with each other through sustained collegial debate. PD should give participants the chance to engage with ideas on a deep level over time. The research literature is clear that there is no one “correct” way of going about PD, but that instead the aim of the PD should be the key consideration when planning. After considering these ideas, I evaluated the types of PD that were most likely to meet the aims of my project.

A number of the types of PD listed were clearly unsuitable for meeting the aims of my project, such as: qualification programme (limited interaction, beyond the length of project); mentoring and coaching (only effective when there is one focus area with clear criteria that a teacher is coached in); education conferences (the content to be covered needed to be flexible and adaptive to teacher input); observation visits to other schools (this would only be effective after a collective understanding had been developed). The types of PD that were most likely to meet the aims of my project were workshops, participation in a network of teachers, and collaborative research. These three types of PD were incorporated into the approach I decided to take, which was a series of workshops that gave the opportunity for participation in a network of staff dedicated to collaborative research with the aim of developing a collective understanding of FR.

### 3.8 Research methods

An intervention, in the form of a PD programme, was designed to help investigate my research questions:

1. To what extent does participation in a cross-faculty network of staff result in a collective understanding of a complex pedagogical concept, and how effective is a workshop approach in supporting this?
2. What was the professional and personal impact of this participation?

### Overview of research process
My research method was influenced by a number of key ideas that arose from my literature review. Most significantly, the literature suggested that collective understanding should be developed through a collaborative process, and that the aim of a PD programme determines its design. I developed a PD programme to meet the aim of developing a collective understanding of the FR tagline amongst a representative group of Kristin staff. An overview of the research process is given here, with each part of the process explored in detail throughout this chapter.

A programme of PD was designed that utilised a workshop approach to learning. A series of six, fortnightly workshops was created to explore the themes relating to future-readiness in education that had emerged from the literature. Five experts in these areas were selected to facilitate the workshops, which had a key theme but fluid content. The workshop series was advertised to all staff, and nine staff volunteered to participate. Pre-workshop interviews were carried out with these nine staff to determine their pre-workshop understanding of FR and their confidence in sharing their understanding with others. Pre-workshop interviews were evaluated, and open coding was applied to identify themes. These themes were shared with the workshop facilitators, who developed workshops based on their area of expertise in response to the pre-workshop thinking of the participants.

In the first workshop, participants learned the concept mapping technique and created a concept map of their pre-workshop understanding of FR. Individual concept maps were updated at the end of each subsequent workshop to show the change of thinking that occurred. The workshop content was adapted iteratively, both within and in between workshops. Facilitators who were yet to present were updated on the content and outcome of the workshops that had taken place prior, and their own workshops were adapted accordingly. In the final workshop, concept maps were used to identify proposition statements, which were shared to determine whether a collective understanding had been reached. A post-workshop survey on the effectiveness of the workshops was completed by each participant, followed by individual post-workshop interviews that repeated the questions of the pre-workshop interviews to see whether a change in thinking and confidence when discussing what it means to be FR had occurred. Less formal follow-up meetings were arranged to share a summary of the collective understanding that had emerged and check this for accuracy and authenticity. Anomalies in the data gathered were explored with individual participants to better understand the reasons for these. The impact of the workshops was considered in the post-workshop survey, and incidental follow-up
conversations occurred over the following year as action based on participation in the workshop group took place.

Engeström (2001) states that “Any theory of learning must answer at least four central questions:

(1) Who are the subjects of learning, how are they defined and located?;
(2) Why do they learn, what makes them make the effort?;
(3) What do they learn, what are the contents and outcomes of learning?; and
(4) How do they learn, what are the key actions or processes of learning?”
(Engeström, 2001 p. 133)

In this section, I will use these four questions to examine the research methods developed within the framework of CHAT. The first two questions are addressed in section 3.10, and the third and fourth in section 3.11.

3.9 Participant recruitment

The aim of my project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff. The term ‘representative’ is defined in the Cambridge dictionary as ‘typical of, or the same as, others in a larger group of people or things’ (“Representative,” n.d.). The term ‘representative’ could refer to many different criteria, such as gender, age, role, ethnicity, year levels taught, seniority within the organisation etc. It was impossible to incorporate all of these criteria when considering participant recruitment. Instead, ‘representative’ in my study refers to the departments in which staff work, so as to ensure that the workshop group did not consist solely of maths teachers, or solely of support staff, but instead staff from different areas of the school were included. No further criteria were used to rank the desirability of potential participants. As the aim of the project was to develop a collective understanding of FR, it was important that any staff member, regardless of their understanding of FR or role within the school, was eligible for involvement in the project. The selection process (shown below) was shared with staff in the forum post advertising the FR workshop group to ensure that transparency and openness were maintained. Note: The original text was written in future tense, so is included in this format below.
3.9.1 Selection process

Staff who volunteer to participate in the workshop group will be sorted into their department areas. A maximum of 10 participants will be selected, as this is a large enough number to have a representative from different areas of the school, and small enough to enable discussion and participation from each member. As the majority of staff are teaching staff, a maximum of seven teachers and three support staff will be included. If more teaching staff volunteer than are required, the following numbers of teaching staff will be selected at random, by a neutral staff member, from each category:

- Two from Junior School (450 students aged 3-10 years)
- Five from Middle/Senior School (1,150 students aged 11-18 years – this group is combined as the majority (over 85%) of Middle and Senior School teaching staff teach at least one class from both Middle and Senior School. The Middle and Senior School staff will instead be categorised based on the faculty they teach within. A maximum of one staff member from each faculty will be included.

The faculties are:

- Arts and Technology
- English
- Health and Physical Wellbeing
- Humanities and Commerce
- Languages
- Mathematics
- Science
- Learner Support

A maximum of three support staff (non-teaching) will also be selected. As with teaching staff, support staff will be categorised based on their area of work. The nine categories are as follows:

- Administration
If more support staff volunteer from one group than are required, one support staff member will be selected at random to represent this group.

3.9.2 Sampling method

The literature in the field of effective PD suggests that when PD is mandated, employees exhibit lower levels of motivation to attend. These lower levels of motivation affect employees’ willingness to participate in PD, engage in PD activities and to transfer what was learned (Feldman & Ng, 2012). Based on the literature, I chose to make participation in the workshop group voluntary. This decision gave me less control over the participant selection process but ensured high levels of motivation of those participating.

Edwards (2011) explains that “purposive and convenience sampling are forms of sampling frequently used in qualitative research. Purposive sampling is the selection of research participants through a strategic approach” (p. 37) and can be used to ensure participants are “people who are relevant to the research questions” (Bryman, 2008, p. 458). Another form of sampling is convenience sampling, where “the researcher selects participants because they are willing and available” (Creswell, 2002, p. 167). Convenience sampling was selected for a number of reasons. Firstly, the timing and duration of the workshops meant that many staff were unable to attend due to other commitments, such as family, sporting and personal commitments. Secondly, a non-probability technique such as random sampling would require permission from the school’s senior leadership to mandate that those selected must attend. As the workshop group was not initiated by the school, it would have been hard to argue the necessity of mandating participation. Further to this, Hatch (2008) argues that “making
representatives of a particular group a part of the mission-building process does not necessarily mean that all members of that group will “buy-in” to the end result” (p. 2). Thirdly, some staff simply were not interested in participating for a number of different reasons, such as perceived lack of relevance to their context, personal circumstances or an already exhaustive workload. Engeström (2000) maintains that change and development imported from outside of the organisation and implemented from the top down often fails, as a standardised approach “does not fit well in the differing conditions, values, and constraints experienced by people in the cultural-historical contexts of their own real life-worlds” (Yamazumi, 2007, p. 22). Based on the conclusions of the literature in this area, convenience sampling was used. The workshops were advertised at a whole-school staff meeting and on the school forum, which is accessible to all staff (teaching and support staff), and volunteers were asked for.

A total of 11 staff responded to the forum post asking to participate in the workshop group. Nine responded via email, and two staff members came to see me in person. One of the two who came to see me asked whether the day the workshops were held could be changed, and the other asked if the finish time of the workshops could be changed. The requests were made as one of these staff members did not work on Mondays (the day the workshops were held), and the other was interested in participating, but due to childcare arrangements could not stay past 4:30 pm. Unfortunately, the time and day of the workshops was not able to be changed. This was because the workshops were held on a Monday (the same day as staff meetings, which participants were excused from attending) to ensure workshop group staff were not overloaded with extra commitments on top of their already heavy workload. The two-hour timing was also fixed, as it was not possible to have time to explore deep ideas and have sustained collegial debate within an hour-long workshop. Following these conversations, these two participants withdrew their request to participate, leaving nine staff members who were all selected to participate in the workshop group. Remarkably, those who volunteered fit the inclusion criteria and there was no reason to exclude any of the participants. An overview of the workshop participants is shown in Table 2 below.
3.10 Workshop participants

The first of Engeström’s questions, “Who are the subjects of learning, how are they defined and located?” is addressed here. The participants were all Kristin staff. Table 2 gives an overview of some of the key information needed to better understand the profile of the workshop group.

Table 2
Profile of the Workshop Group

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Department:</th>
<th>Role:</th>
<th>Years at Kristin:</th>
<th>Attendance at workshops: (/6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frances</td>
<td>Female</td>
<td>Marketing Support</td>
<td>1-4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Kent</td>
<td>Male</td>
<td>ICT Support</td>
<td>10-14</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Louise</td>
<td>Female</td>
<td>Learner Support</td>
<td>10-14</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Elizabeth</td>
<td>Female</td>
<td>Science Teaching</td>
<td>1-4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Eduardo</td>
<td>Male</td>
<td>Mathematics</td>
<td>1-4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Michelle</td>
<td>Female</td>
<td>Junior School</td>
<td>5-9</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Emma</td>
<td>Female</td>
<td>English Teaching</td>
<td>1-4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Olivia</td>
<td>Female</td>
<td>Health &amp; PE</td>
<td>1-4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Charlotte</td>
<td>Female</td>
<td>Junior School Art</td>
<td>5-9</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Convenience sampling was an effective technique as all of the participants were intrinsically motivated to attend (See Table 3 below). This may account for the high levels of attendance, and the fact that no participants withdrew from the workshop group during the project. However, it resulted in a greater level of inclusive bias than if another method of sampling, such as random sampling, had been used. In spite of the voluntary nature of the participants, the group was still diverse in their roles and representation of many age groups of students and subject areas taught at Kristin. It is worth noting that there was a relatively low level of male involvement (2/9 participants), a slight majority of the workshop group had worked at Kristin.
for less than five years (5/9 participants), one staff member (Frances) was also part of the Senior Leadership Team, and there was a relatively low level of ethnic diversity within the workshop group. Workshop group participants’ ethnic backgrounds were NZ-European, European and Nordic in origin. Biases arising from these aspects of the workshop group were recognised and their effects considered throughout the research project.

The second of Engeström’s questions, “Why do they [subjects] learn, what makes them make the effort?”, was also considered. Participants were asked, “What was your reason/s for participating in the FR workshop group?”. Their responses are recorded below.

Table 3
Reason for Participation in Workshop Group

<table>
<thead>
<tr>
<th>Name</th>
<th>Reason for participating in workshop group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frances</td>
<td>I was interested for a range of reasons: relevance for our marketing of Kristin and use of Future Ready; what does this look like in reality of day to day teaching; the gap between what we are saying in marketing and what we are delivering - could this project help identify sweet spots and future projects or directions or people; opportunity to cross pollinate with staff from all areas</td>
</tr>
<tr>
<td>Kent</td>
<td>I joined the Future Ready group as I felt it was relevant to the ICTS team at Kristin in terms of what we could bring to such discussions. I have been following some of the talk on 'Future of Work' and listening to what the Australian schools’ IT teams are talking about on the MITIE forums (Managers of IT in Education - Australia), so I was really interested to be part of what we would be initiating at Kristin.</td>
</tr>
<tr>
<td>Louise</td>
<td>My reason to take part was because I was filled with misguiding about the term Future Ready and what it meant to me. I wanted to investigate this further and learn and reflect on others ideas, knowledge and input.</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>I like learning, I want to get some good professional development, I wanted an answer to the question of 'what is future ready'? I wanted to be able to feel I knew what Kristin was all about.</td>
</tr>
</tbody>
</table>
Eduardo

I'm just generally interested in learning about education and the future of education. At the time I was also starting to be more interested and reading about both self-improvement, psychology and its links to the future of technology (singularity).

Michelle

I was interested because I thought that the tag line for the school was just words and I didn't know what it meant or should mean! I was interested in exploring that thought.

Emma

I have always been interested in the 'why' of teaching. I believe that unless we have a clear purpose as to why we are teaching, the 'what' and the 'how' are not as focused or valuable. I believed that this group had a clear focus on the purpose of education and that excited me!

Olivia

The reason I got into your Future Ready Workshop group was for various reasons. For one I was inclined to be more involved with the ins and outs of Kristin School to better understand how the school ticks over and two I was interested to hear how many different people had similar ideas of what the future holds for our students in an ever changing world and how they are currently preparing them so I could also best help our students if I was lagging behind in any area identified.

Charlotte

I am always interested in research about preparing our students for their future and how I can best support that development while working with them. I believe it is important for teachers to be aware of current pedagogical practice and research. And when possible to participate in such PD. It also happened to tie in with my post grad studies so win win.

In accordance with the findings of Deci and Ryan (2008) relating to non-mandatory PD, all of the workshop group could articulate a compelling personal reason to participate. While each individual had different reasons for participating, the participants’ responses all showed that intrinsic motivation was their key reason for participating.
3.11 The Professional Development programme

The professional development (PD) programme consisted of a series of six workshops which took place on Mondays fortnightly in Term 3, 2017. All of the workshops were held at Kristin School in a room called The Summit. Participants typically sat around a large oval table, with the facilitator either sitting at the table or presenting from a TV screen in front of the table. Most workshops ran from 3:30pm - 5:30pm, with the exception of the first and sixth workshop. The first workshop had a dual focus (concept mapping/21st century skills) so ran from 3:30pm - 6:00pm. The sixth workshop was focused on summarising the workshops and establishing whether a collective understanding had emerged, and as there was no new content explored it ran from 3:30pm - 4:30pm. All workshops were videoed to ensure that workshop participants who were absent were able to catch up on content missed, and that staff who were not part of the group were able to access the workshop content. Three workshops had paid external facilitators and three had voluntary internal employee facilitators. Afternoon tea was provided at each workshop. Afternoon tea and the three external facilitators were paid for by Kristin School.

Table 4

Workshop Overview

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Focus:</th>
<th>Presenter/facilitator:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concept mapping &amp; 21st century skills</td>
<td>Nathan Calvert (project author)</td>
</tr>
<tr>
<td>2</td>
<td>Digital Fluencies</td>
<td>Andrew Churches (Vice-president of the Global Digital Citizen Foundation)</td>
</tr>
<tr>
<td>3</td>
<td>‘Wicked problems’</td>
<td>Chris Clay (Award-winning educator, educational consultant)</td>
</tr>
<tr>
<td>4</td>
<td>Supporting future-oriented learning &amp; teaching</td>
<td>Ally Bull (Educational theorist)</td>
</tr>
<tr>
<td>5</td>
<td>Student wellbeing in a changing world</td>
<td>Dr Emma Woodward (Educational Psychologist)</td>
</tr>
<tr>
<td>6</td>
<td>Contextualising workshops, survey and Concept map completion</td>
<td>Nathan Calvert (project author)</td>
</tr>
</tbody>
</table>
The third and fourth of Engeström’s questions, “What do they [the participants] learn, what are the contents and outcomes of learning?” and “How do they learn, what are the key actions or processes of learning?” are explored in this section.

Whilst the general subject matter of the workshops was fixed, facilitators started each workshop by tuning in to where the workshop group was at in their thinking and using this as a starting point, rather than automatically assuming my understanding of the workshop group’s thinking was correct. Workshop facilitators were also tasked with identifying and challenging preconceptions and providing opportunities for meaningful dialogue and debate between participants and facilitator. Facilitators were experts in their field, while participants had a much deeper understanding of the Kristin context than the facilitator. Therefore, both facilitators and participants needed to work together to develop a collective understanding of FR within the Kristin context. There was no predetermined outcome for each workshop, as the direction of the workshop was open to the influence of the participants. A workshop approach was selected to give participants time to explore, discuss and synthesise their findings within the Kristin context.

### 3.11.1 Workshop facilitators and overview

Table 5

*Credentials of Workshop Facilitators*

<table>
<thead>
<tr>
<th>Name</th>
<th>Workshop</th>
<th>Credentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nathan Calvert</td>
<td>Concept mapping &amp; 21st Century skills</td>
<td>Project leader, NEXT Foundation Expert Teacher</td>
</tr>
<tr>
<td>Andrew Churches</td>
<td>Digital Fluencies</td>
<td>Vice President of the Global Digital Citizen Foundation, co-author of <em>The Digital Diet</em>, the <em>Apps for Learning</em> Series, and <em>Literacy is Not Enough</em></td>
</tr>
<tr>
<td>Chris Clay</td>
<td>Wicked Problems</td>
<td>Independent education consultant, TEDx speaker, Microsoft International Innovative Educator, SingularityU project co-lead</td>
</tr>
<tr>
<td>Ally Bull</td>
<td>Supporting future-oriented teaching and learning</td>
<td>NZCER senior researcher, independent education consultant</td>
</tr>
<tr>
<td>Dr Emma Woodward</td>
<td>Student wellbeing</td>
<td>Clinical Director for the New Zealand Institute of Wellbeing and Resilience</td>
</tr>
<tr>
<td>Nathan Calvert</td>
<td>Project summary</td>
<td>Project leader, NEXT Foundation Expert Teacher</td>
</tr>
</tbody>
</table>
Workshop facilitators were selected using a number of different means. Once relevant themes had been selected from the literature, experts in these fields were contacted and asked if they would like to facilitate a workshop in this area. Some of the facilitators were known to me and some were not. I contacted each of the facilitators directly. This was done by sending an email outlining the project’s aims, sharing my thoughts about possible workshop content, and asking if they would be interested in finding out more. Reasons for selecting each workshop facilitator are explained below.

As the project leader, I was the facilitator of the first workshop. I elected to facilitate the first workshop as I needed to introduce myself to the workshop group and give an overview of the project’s history and purpose. As I had carried out the staff survey myself and collated the results, I was the most knowledgeable about the process and therefore it was logical for me to share the results with the workshop group. Further to this, the concept mapping technique needed to be taught to the group, and I wanted to do this personally so that any issues that arose with using concept maps could be dealt with in a timely manner. Through the literature review process, I had identified three key 21st century skills studies that merited discussion and felt that having an in-depth knowledge of all three studies gave me enough expertise in this area to lead the first workshop.

**Workshop 1:** Concept mapping & 21st century skills  
**Facilitator:** Nathan Calvert

**Purpose:**
The purpose of the first workshop was to develop relationships between the workshop group, provide an outline of the workshop series, introduce the tool of concept mapping and discuss the findings of three different 21st century skills studies.

**Objectives:**
Workshop participants:
- are introduced to each other and begin to build relationships;
- learn how to interpret concept maps;
- can create a map showing their understanding of FR;
- understand the background to and purpose of the workshops, and the need for discussion and debate;
examine 21st century skills studies and can articulate why they agree/disagree with the findings.

**How this was achieved:**

As the project organiser, I led the first workshop. After sharing an overview of the project in the form of a concept map, I introduced the concept mapping technique and shared four examples of completed concept maps for analysis. These concept maps were based on themes such as Climate Change, Earth as a System, Statistics, and Biodiversity. After analysing these concept maps, the different parts of a concept map were examined, and participants’ questions answered. Following this, workshop participants completed a simple ‘fill-in-the-gaps’ concept map to help them further understand the purpose of concept maps and the way to create them.

Kristin School has well over 200 staff, so many of the workshop group participants were unknown to each other and met for the first time at the first workshop. Participants therefore created a concept map with themselves as the key concept, which participants then used to introduce themselves. Finally, participants used their new knowledge of concept maps to create a concept map showing their current understanding of FR. See section 3.13.4 on concept mapping for a detailed analysis of the tool and its use within the workshops.

After a short afternoon tea break, the workshop focus switched from concept mapping to the background of the project. Results of the staff survey were shared, and the ways that these had influenced the content of the workshops were discussed. A short activity, where participants viewed a vase in the middle of the table and described it from their viewpoint, was used to symbolise the need for sharing of different perspectives to ensure that the whole picture is seen. The key part of the second half of the workshop was the discussion of three different studies which listed the 21st century skills that research has shown are necessary for students to succeed in the 21st century. Each study came to different conclusions, making their comparison an excellent starting point for debate. Participants were divided into groups of three, and each group read and summarised one study and its findings. Within each group, the three participants debated the merits of the study’s findings and discussed the extent to which they felt Kristin focuses on these skills, and the extent to which students exhibit them. Following on from this, three new groups were formed which were made up of one member
from each of the first three groups. These new groups each shared a summary of their study and the discussion that had followed. In the second group, the three studies were compared and differences in the conclusions were explored. The key points that emerged from these discussions were then shared with the workshop group as a whole for consideration.

The first workshop finished with the participants updating their concept map with any changes in thinking that had occurred as a result of the 21st century skills studies or the discussions following.

Andrew Churches was the facilitator of the second workshop. Andrew was known to me as we work within the same organisation. He is employed by Kristin School as the Technology Head of Faculty and has given presentations in the areas of digital technology within the school and at education conferences. Churches has co-authored a number of books related to 21st century skills and digital tools. Due to his expertise in this area, Churches was asked to facilitate the second workshop. One benefit that arose from working within the same organisation was that we were able to speak about the workshop content a number of times to ensure that his workshop built on the first workshop, that it provided a greater context for the project, and that Churches was clear on the overall aim of the project.

**Workshop 2: Digital Fluencies**

**Facilitator:** Andrew Churches

**Purpose:**
The purpose of the second workshop was to contextualise the need for 21st century skills by exploring the effects of the digital revolution upon society.

**Objectives:**
Workshop participants:
- understand how much change the world has experienced since the introduction of the internet in 1991, and how this has affected the education sector;
- develop a better understanding of the worldview of our students by understanding the digital nature of the world they’ve grown up in;
- discuss new technologies and their impact upon student’s lives;
- understand digital citizenship and the rules that apply in the digital sphere;
- learn how to develop and assess 21st century skills;
- consider what balance should exist between digital and ‘real-world’ experiences and why we believe this.

How this was achieved:
The facilitator, Churches, started his workshop by giving a keynote-type address, taking questions from the workshop participants as he went. His presentation began with a comparison between the world in 1991 and the world in 2017 (the present day). From music, to popular culture, to digital technology, Churches set the stage for his workshop by making it clear just how significant the changes that have happened in the last 26 years are. Churches then led the workshop group to consider the ramifications of this change for our students. Rather than having lived through this time period and being able to reflect on these changes, the oldest students currently at Kristin were born in the year 2000 and had therefore only experienced a ‘digital world’. Churches argues that, as ‘digital natives’, our students are much more tech-savvy than the staff who are mostly ‘digital immigrants’, and staff therefore need to be aware of this and adapt their teaching accordingly. Churches shared about a number of emerging technologies and the ways these may influence our students’ lives. Building on the content of the prior workshop, Churches spoke about the Essential Fluencies, which are structured processes for developing 21st century skills. He concluded the keynote part of his workshop by examining the ways in which the Essential Fluencies can be used to assess learning in a more meaningful way.

Churches then moved to a time of discussion, which was less structured and was based around the questions of the workshop group. Themes arose organically, and this part of the workshop was more conversational in nature. The following topics were discussed in detail:

- Assessment within the education system (the assessment tail wagging the dog of education, why this is, and what we can do about it);
- real-world life experiences vs. digital experiences;
- the perceived importance of knowledge vs. imagination;
- alternative programmes of education;
- psycho-social development of students and how this affects age grouping;
interdisciplinary learning and a cross-curricular approach.

Following this open discussion, participants were given their concept maps and asked to reflect on any changes in thinking that had occurred during the second session or in the fortnight between the first and second sessions. Elizabeth discussed how she’d initially thought of FR as relating to digital technology but was now starting to view it through more of a student wellbeing lens. Frances then shared about meeting an ex-Kristin student who now worked as a journalist, and her surprise when he said he had no idea about what his job would look like in 5 years, and that all of the colleagues he’d started with 10 years ago had since left the industry. This confirmed her belief that people can no longer be defined by their job title, as the employment landscape is constantly changing. A discussion on the pitfalls of the speed of digital media followed, with Frances stating that there’s no longer integrity now that the media have sacrificed accuracy for speed. Elizabeth disagreed with this view, arguing that whilst many editor’s jobs have been lost, the journalists themselves are providing the filter for accuracy in their place. Kent said that the comments about connecting with the physical world really resonated with him, and how a point of difference for Kristin has always been, and should continue to be, how students are brought into nature and able to connect through these experiences. The workshop session finished with participants updating their concept maps based on the information shared and the discussion that followed.

Chris Clay was the facilitator of the third workshop. Chris and I had met when he was the Education Director of The Mindlab and I was undertaking a course of study there. The workshops Clay facilitated at The Mindlab were provocative, engaging and challenging. When I contacted Chris to let him know about the workshops, he was quick to accept the invitation. Rather than reinforce what Churches and I had spoken about, Clay instead challenged everything that had been shared so far. This was not to discredit or disprove earlier content, but to challenge the workshop group in their thinking, to ensure they started to look at FR through multiple perspectives, and to ensure they approached the problem of developing an understanding of FR by first acknowledging the complexity that is involved when thinking about the future and ways we can prepare students for it.

**Workshop 3: Wicked Problems**

**Facilitator:** Chris Clay
Purpose:
The purpose of the third workshop was to challenge the mindset of the workshop group. By drawing a connection between wicked problems and developing an understanding of FR, the aim was to challenge participants to move away from attempting to find simple solutions to complex problems such as developing a collective understanding of FR.

Objectives:
Workshop participants:
- develop an understanding of the effects of linear vs. exponential growth, AI, and automation resulting from the digital revolution;
- learn about wicked problems such as Climate Change and how they may affect our lives and those of our students;
- have their individual and collective thinking about FR challenged;
- understand the difference between simple, complicated, complex and chaotic systems;
- reflect on what the purpose of education is and why they believe this.

How this was achieved:
Rather than having a keynote address which was followed by discussion, Clay wove in times for discussion and debate throughout the workshop. After introducing himself and sharing a little about his interests in the area of future readiness, Clay spent a considerable amount of time teasing out the individual and collective understanding held by the workshop participants on the themes already covered, such as 21st century skills, the digital revolution and its effects, preparing students for jobs of the future and the increasing rate of change in the world. After establishing a general feel for the understanding held by the workshop group, Clay spoke about wicked problems and their effects. Factors contributing to climate change, such as consumerism, urbanisation and industrialisation were explored, as Clay shared about the interacting elements that all had to be considered when attempting to address wicked problems.

Clay then introduced the workshop group to Moore’s Law, which states that “computing power tends to approximately double every two years” (Templeton, 2015, p. 1). This was
used to highlight the difference between linear growth (which human minds are used to coping with) and exponential growth (which human minds are not used to). Due to this exponential growth in computing power, the use of AI and the automation of jobs are becoming more widespread, Clay shared. He then made the claim that the continuing automation of jobs would lead to a huge level of technological unemployment. He argued that this would be one of the biggest issues for our students to face and asked the workshop group why they are so concerned about preparing students for jobs “when we’re staring down the barrel of a jobless future.” This claim was met with a number of different reactions from the participants, including shock, disbelief, disagreement, and confusion.

In the discussion that followed, this claim and the reasons for it were explored by the workshop participants. Olivia asked what the purpose of school was, if it was not to prepare students for future employment. This led to a discussion about the history and purpose of education, from Socrates until modern society. Clay introduced new ways of viewing collaboration, which he argued was the most important thing necessary for people to address wicked problems. He challenged the workshop group to see wicked problems as wicked opportunities, and suggested that the best way to prepare students for the future was to have them create it. In closing, he showed a picture of the FR logo, then asked participants how they felt about this and whether FR was something that an organisation could claim to be.

At the end of his workshop, the atmosphere in the room was sombre and reflective. Less discussion took place when concept maps were given out to be updated, and people completed them in silence, taking time to pause and consider the ideas shared before updating their maps.

Ally Bull was the facilitator of the fourth workshop. I had met Bull once prior when she facilitated a workshop at Kristin with a separate group of staff. Bull, an independent education contractor, knew Clay and had worked with him previously. She had communicated with him about his workshop and was therefore aware of the content that had been covered and the questions that were raised in the workshop prior. Bull’s research on future-focused education was carried out while working for NZCER (New Zealand Council for Education Research), and a number of her papers influenced my study. After Clay had challenged the thinking of the workshop group and left some participants feeling overwhelmed about problems that will arise
due to the complexity the future will likely bring, Bull focused her workshop on the strategies people can use to thrive within these complex times.

**Workshop 4: Supporting future-oriented teaching and learning**  
**Facilitator:** Ally Bull

**Purpose:**
The purpose of the fourth workshop was to provide the workshop group with tools that support future-oriented teaching and learning.

**Objectives:**
Workshop participants:

- get further context for the ideas Clay shared about simple, complicated, complex and chaotic systems, and understand how to thrive in complex times;
- learn two tools that can be used in their own lives and work contexts;
- practice using these tools as a workshop group.

**How this was achieved:**
After Clay’s sobering workshop left the workshop group feeling a little pessimistic, Bull led the workshop group in the use of two tools which can help people thrive in complex times. These two tools were adapted from Berger (2011) and are used to enable people to see multiple perspectives and view problems objectively. The first tool is called adaptive learning. Berger (2011) describes the adaptive learning process:

In relatively small groups (6-8 works best), people take turns presenting an issue that stymies them: we call that the “adaptive challenge.” The others in the group then have 15 minutes or so to ask genuine and curious questions. They cannot make suggestions, tell stories of their own or ask a question that is actually a suggestion in disguise (p. 2).

The presenter writes down, but doesn’t respond to the questions, as “it doesn’t matter what the answer is so much as the thinking that opens new possibilities” (Berger, 2011, p 2). After the adaptive challenge, the presenter contemplates the questions, and the next time the group meets the presenter reports back on the questions they found most useful, how this changed their thinking, the action they ended up taking and new issues that have arisen. The process is then repeated using the new issue that has arisen as the next adaptive challenge.
Each participant in the workshop group chose an adaptive challenge that they were facing either personally or professionally. While Bull initially led the questioning, the workshop group became more and more confident at asking open, curious questions as they became more experienced in using the tool.

The second tool was used to help the workshop group try to identify their natural biases and to view their opinions more objectively. To do this, Bull split the workshop group into two smaller groups for a debate. The groups were loosely split into staff who teach science or a related field, and those who teach art or a related field. The first group (those who teach science or in a related field) were told they would be arguing that “the only subject that should be taught in schools is science” and the second group would counteract this by arguing that “the only subject that should be taught in schools is art”. With just five minutes to prepare, the groups quickly talked through their arguments and wrote their key points. Just before the debate was due to begin, Bull stopped the preparations and told the group that her initial instructions had just changed. They were now to argue against the position they’d prepared for (e.g. the only subject that should not be taught in schools is science). While some participants tried to quickly make counter-arguments from their initial arguments, others just gave up, unable to argue against a belief they held dearly. The debate did not go ahead, but rather a time of reflection followed in which participants examined their beliefs and the reasons for their response when they were told to argue against something they believed in. This led to a discussion of ways we can recognise our own biases, and how we can examine our opinions objectively to find the underlying reasons for why we hold these opinions.

At the conclusion of the workshop, participants again reflected on the workshop content and discussions that had taken place and updated their concept maps accordingly.

Dr Emma Woodward was the facilitator of the fifth workshop. I had not met Dr Woodward before the workshop series and was made aware of her expertise when she was recommended by a Clinical Psychologist whom I’d hoped to use but was not available at the time of the workshops. The requirements for this workshop were that the facilitator was not only an expert in the area of student wellbeing but had also considered these ideas through a future-focused lens. Through conversation with Dr Woodward, it was clear that she had expertise in the area
of student wellbeing, but that she also had a keen interest in future-focused education. Further to this, Dr Woodward had significant prior experience as a workshop facilitator.

<table>
<thead>
<tr>
<th>Workshop 5: Student wellbeing</th>
<th>Facilitator: Dr Emma Woodward</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose:</strong></td>
<td></td>
</tr>
<tr>
<td>The purpose of the fifth workshop was to ensure that the needs of the key stakeholders in education - students - are at the front of mind when considering what it means to be FR.</td>
<td></td>
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<tr>
<td><strong>Objectives:</strong></td>
<td></td>
</tr>
<tr>
<td>Workshop participants:</td>
<td></td>
</tr>
<tr>
<td>- revisit the content of Andrew Churches and Chris Clay’s workshops through a different lens, this time considering the effects of a digital world on student wellbeing;</td>
<td></td>
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<tr>
<td>- develop an understanding of dopamine hijack;</td>
<td></td>
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<tr>
<td>- consider the importance of mindfulness and mindset;</td>
<td></td>
</tr>
<tr>
<td>- discuss ways to utilise strengths in a school setting.</td>
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</tr>
<tr>
<td><strong>How this was achieved:</strong></td>
<td></td>
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<tr>
<td>Dr Woodward approached the workshop in a similar way to Clay. After a brief introduction, she spent time teasing out the understanding the workshop group were building. Throughout her workshop, she left time for discussion and participant input. Before beginning her presentation, she gave participants an overview of the content she could speak about. After reiterating that the participants were the experts in their own context, she had the workshop group select the content they were most interested in based on their understanding of Kristin’s current areas of need. The workshop group were interested in many of the areas she covered in her overview but were particularly interested in the ways that growing up in a digital world affected students’ health and wellbeing. Once the content was determined, Woodward began by speaking about dopamine hijack which affects students who spend prolonged periods of time gaming or on social media sites. After discussing Nature Deficit Disorder and ways that schools could combat this, participants discussed Kristin’s natural grounds and the</td>
<td></td>
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</tbody>
</table>
programmes in place to help students connect with nature and maintain balance in their lifestyle.

Woodward covered a number of areas relating to student health and wellbeing such as ways to build resilience, mindfulness and mindset, and utilising student’s strengths in the classroom. In spite of the complexity of each of these areas, Woodward’s overview gave participants the chance to consider how Kristin fares in each regard, and where there is scope for improvement. Discussion centred on the mindfulness programme that was being piloted with one year group of students and the results that this was having, as well as discussions around a growth vs. fixed mindset, and ways to develop a growth mindset. Workshop participants shared their experiences relating to student wellbeing, which covered multiple year levels of students from the Junior School to the Senior School. The workshop ended with Woodward encouraging the workshop group to consider the next steps for the project in terms of the impact that could be had on student wellbeing.

As with the other workshops, there was a time for reflection on the workshop content and its connections to prior workshops. To conclude, concept maps were updated before the workshop finished.

As the project leader, I was the facilitator of the sixth (and final) workshop. I decided to facilitate this workshop to ensure that the aims of the project were met, and to get the collective wisdom of the workshop group regarding ways to further the project and involve the wider staff. Had this been facilitated by someone outside of the project, the research aims may not have been met and the data collected would not have been as easily contextualised within the project.

Workshop 6: Project summary  
Facilitator: Nathan Calvert

Purpose:  
The purpose of the sixth (and final) workshop was to wrap up the workshop series, discuss ways to engage the wider staff, and share individual understandings to determine whether a collective understanding of FR was achieved.
Objectives:
Workshop participants:
- Share opinions on what the most important aspects of FR are to see if a collective understanding had been reached
- Discuss next steps for the project
- Consider ways to engage the wider staff

How this was achieved:
In the final workshop, no new content was introduced. Instead of following the format of the previous workshops, the collective thinking of the participants was sought to consider a number of areas. The first area was determining whether a collective understanding of FR had been developed. As this was one of the uses of the concept maps, this is covered in detail in section 3.14.2.

A discussion on the input of the wider staff into the workshops then took place. Most participants felt that the wider staff were relatively disengaged from the workshop group process, in spite of the opportunity to watch the workshop videos and be involved in forum discussions. Reasons for this were considered, and a discussion about ways that the wider staff could be engaged in this area of thinking ensued. Next, participants were asked about what they felt Kristin needed to focus on most, based on the new knowledge they had from attending the workshop series. Finally, participants considered next steps for the project and the amount of input they would like to have moving forward. As well as a discussion about this, a survey was also sent to the workshop participants to get individual feedback on the effectiveness of the workshop group process (see Appendix 4). The feedback shared is explored in chapter four.

3.12 Research design

Three types of measurement tool were used to measure the effectiveness of my project. These tools, their reason for selection and their use in the project are detailed in the following sections. Some of these tools were used more than once, as shown below.
Tools used in project:

- Questionnaire 1 (staff survey) and questionnaire 2 (post-workshop survey)
- Pre-workshop and post-workshop interview
- Concept maps

3.12.1 Procedures

A brief overview of each tool and its use within the project is shared here and expanded on in section 3.13.

Nine months prior to the workshop series starting, a questionnaire was designed to survey all of the Kristin staff (see Appendix 1). This was carried out as a form of stakeholder engagement to inform my project and ensure there was a need for the project to happen. As outlined in the introduction, keywords were analysed, and conclusions were drawn from the data. Quantitative data regarding staff members’ views of whether a shared understanding of FR exists, and their opinion on whether this is necessary, validated the need for the project. This instrument provided justification for the project but was not used as a tool within the scope of the research project. Therefore, the post-workshop survey is the tool examined in detail.

Pre-workshop interviews (see Appendix 2) were created to determine the understanding of FR that participants had before participation in the workshops, and their confidence in sharing this understanding with others. The questions in the pre-workshop interview were open-ended and scenario-based which gave participants freedom to share their own understanding, as well as a personal context to help them make sense of what was being asked. The pre-workshop interviews were carried out one month prior to the first workshop. The interviews were piloted with a staff member who was not involved in the workshop group, then refined based on her suggestions. Each of the pre-workshop interviews was recorded using a digital voice recorder. Once each of the interviews had taken place, the interviews were transcribed. Open coding was applied, and the themes that emerged were shared with the workshop facilitators to aid them in their planning.

During the workshops, the method of concept mapping was taught to participants. After each workshop, concept maps were added to, and these additions were colour coded depending on
the workshop (see Table 6). Once the concept map changes had been made I collected the concept maps and analysed them during the fortnight between workshops. Notable changes in structure or content were recorded, and this information was summarised and shared with facilitators who had not yet presented. In addition to this, videos that had been recorded of the workshops were edited and posted to the staff forum so that all staff had access to the workshop content.

At the end of the final workshop, participants selected primary, secondary and tertiary proposition statements from their concept maps. These were recorded on a shared Google document, and open coding later took place to determine the level to which a collective understanding had developed. A post-workshop survey (see Appendix 4) was sent via email to all participants to find out their views on the effectiveness of the workshops, the personal and professional impact it had, and focus areas for the school moving forward. I collated the results of the post-workshop survey and used these as a source of data to compare and contrast with the other data collected.

After the workshop series ended, post-workshop interviews (see Appendix 3) were carried out with each of the participants. These interviews took place from 3-14 days after the final workshop. Apart from one addition to the post-workshop interview, the questions asked were identical to those in the pre-workshop interview. This served as a way to measure the impact of the project by comparing pre-workshop and post-workshop responses and confidence levels. Once the questions in the post-workshop interview had been answered, participants were asked to discuss their concept map to ensure that I accurately interpreted the maps made. These interviews were then transcribed, and open coding was again used to seek differences between the pre-workshop and post-workshop understandings shared, and to draw conclusions.

Data was then collated, and themes that occurred were explored in individual vignettes. Vignettes were used so that participants and their learning in the workshops could be seen holistically rather than as mere data sets. Finally, the ongoing impact of the workshops was explored through formal and informal conversations in the nine-month period after the completion of the workshop series.
3.13 Research methods

Introduction

The first data collection method used in my study was semi-structured interviews. Both the pre-workshop interview (see Appendix 2) and the post-workshop interview (see Appendix 3) were semi-structured interviews. The second method was a questionnaire. The staff survey and post-workshop survey were a type of questionnaire used to survey a specific group of people. The third method used to collect data was concept maps. Each of these three methods are discussed in the following sections.

3.13.1 Interviews

Merriam and Tisdell (2015) state that, “In most forms of qualitative research, some and occasionally all of the data are collected through interviews […] The most common form of interview is the person-to-person encounter, in which one person elicits information from another” (p. 108). I chose to carry out person-to-person interviews because of the need to elicit the understanding held by individual workshop participants before and after the workshop series. The three main types of interview are unstructured, semi-structured and highly structured interviews. Unstructured interviews provide a wide-ranging, almost unhindered approach to interviewing (Fontana & Frey, 2005). Semi-structured interviews have a “list of questions or fairly specific topics to be covered” (Bryman, 2008, p. 438) and allow the researcher “to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic” (Merriam & Tisdell, 2015, p. 111). Highly structured interviews can be used “to gather common sociodemographic data from respondents” due to the fixed order and closed nature of the questions. “The problem with using a highly structured interview in qualitative research is that rigidly adhering to predetermined questions may not allow you to access participants’ perspectives and understandings of the world” (Merriam & Tisdell, 2015, p. 109).

Due to the specific focus of my study and the questions which framed my research, semi-structured interviews were the most appropriate type of interview to use. A series of open-ended questions were used which allowed the participants flexibility in their responses. While the order of the questions was fixed and the same questions were asked of each participant, it was
necessary to have the freedom to further explore the responses of participants in case of departure from the questions asked. For semi-structured interviews to be successful, they need to be well planned and be piloted before their use with the research subjects.

Piloting an interview is important to ensure that the questions asked are clear and easily interpreted. The pre-workshop interview was piloted with a colleague in my school who was not a participant in the study. She gave helpful feedback which led to slight alterations in the interview process. From the piloting process, I took on board the suggestion of giving interviewees a visual aid of the FR logo and the staff email signature when asking questions 1 and 2 respectively. Interviews were conducted in the workplace of the participant, e.g. the Biology teacher’s own classroom. This added a level of familiarity and comfort to the interview process. Kvale (1996) suggests that making interviewees feel comfortable creates an “atmosphere in which the subject feels safe enough to talk freely about his or her experiences and feelings” (p. 35).

In accordance with best practice (Hinds, 2000), participants were informed before the interview took place that it would be recorded, transcribed and analysed. An information sheet (see Appendix 5) was given to participants and participant consent forms were signed (see Appendix 6). Before beginning my interviews, I considered the cultures of those involved in the research, and cultural considerations were taken into account, as discussed in section 3.16. All of the pre-workshop and post-workshop interviews were digitally recorded and transcribed to ensure responses were accurately documented. While transcription is very time-consuming (Bryman, 2008), it was a crucial part of the interviewing process to ensure the reliability and validity of the data gathered. Transcriptions were sent to participants which enabled them to check for accuracy. The consent form signed by participants made the interviewee aware that they would be recorded, and I made my use of a digital recording device obvious when interviews were conducted.

3.13.1.1 Pre-workshop interview

The data from the interview questions was predominantly qualitative. However, a confidence scale was also used, which resulted in quantitative data being collected. Basic interpretation of this numeric data was carried out and conclusions were drawn from both sources.
In the pre-workshop interview, I first documented the individual participants’ pre-workshop understanding of FR, and then measured the confidence of participants to share this understanding with parents considering a Kristin education for their child, and with a colleague working within their department (see Appendix 2).

To ascertain participants’ understanding of FR, two open-ended scenario-based questions were asked:

Q1. You’re taking a school tour and a prospective parent notices the FR tagline on display. They ask you, what does it mean to be FR? What would you say?
Q2. A new member of staff joins your curriculum team. After receiving an email from you that has FR in its signature, they ask, how do you prepare students to be FR? What would you say?

After each question, participants were asked to rate their level of confidence in sharing their understanding on a five-point interval rating scale, from 1 (‘very unconfident’) to 5 (‘very confident’). This scale was used to measure how confident participants felt sharing their understanding of FR in different scenarios and with different audiences. This quantitative data was gathered to measure the change in confidence that took place from before participation in the workshops until after.

The final question asked participants how confident they are that other Kristin staff would articulate a similar understanding to themselves:

Q3. In the previous two questions you shared your own understanding of the school tagline, FR. How confident are you that a Kristin staff member from another department would share a similar message to the one you have shared for the previous two questions?

Respondents were asked to rate their level of confidence on a five-point scale, from 1 (‘very unconfident’), to 5 (‘very confident’).

This question was selected to determine the level to which each participant felt that the wider school staff share a similar understanding of FR, thus indicating the level to which a collective understanding already exists.
3.13.1.2 Post-workshop interview

The post-workshop interview was identical in questions to the pre-workshop interview, except for one additional sub-question. The use of identical questions meant that the interviews could be seen as a pre-assessment and summative assessment, and change over time would be clearly shown. The additional question was Q3a and asked the participant to consider the level of shared understanding that had developed between the workshop group. This question was added so that the participant could determine the level of collective understanding that existed within the workshop group, compared to the wider school staff. This helped to inform my results, as the responses to this question showed each participant’s opinion on the level to which the workshop group had developed a collective understanding.

3.13.2 Questionnaire

The second method used in my study was the questionnaire. Questionnaires can be used to collect both qualitative and quantitative data (Clarke & Dawson, 1999) and are a valuable tool “capable of producing large quantities of highly structured, standardized data” (Clarke & Dawson, 1999, p. 69). Questionnaires are considered to be a reliable method of data collection as the order and structure of questions are fixed and the presence of a researcher does not influence the results gained (Bryman, 2008). As with interviews, questionnaires are a complex tool. Researchers need to carefully consider elements such as the questionnaire design, pilot testing and administering of the questionnaire. Clarke and Dawson (1999) argue that a poorly designed questionnaire may result in inadequate data being generated, which will impact the validity of the research. The layout, type of questions, language and scale used are all complexities of questionnaire design that need to be carefully considered.

3.13.3 Post-workshop survey

According to Clarke and Dawson (1999), questionnaires should be used to address the aims and research questions of the study. The questionnaire described in this section is the post-workshop survey. The post-workshop survey (see Appendix 4) included closed and open questions. Seventeen questions were asked, of which 12 were qualitative and 5 were quantitative in nature.

The questions asked included a range of focus areas such as:
• effectiveness of the individual workshops and the series as a whole
• personal and professional impact of participation
• effectiveness of taking a workshop approach
• the frequency of interactions with other staff about workshop content
• relevance of workshop content to wider staff

The survey data was analysed, and conclusions drawn are explored in individual vignettes. Survey data was also used to help answer my research questions.

3.13.4 Concept mapping

The aim of my project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff. For this to happen, participants needed to undergo a change in thinking from their pre-intervention individual understanding of FR to a collective post-workshop understanding. This change in thinking was expected to occur as a direct result of exposure to the research shared within the workshop group and the discussions that followed.

“One of the critical elements influencing the potential for the construction of new knowledge is the existing knowledge of individuals and groups of people. Thus becoming aware of this knowledge is a prerequisite for processes involving the creation of new knowledge” (Novak & Wurst, 2005, p. 107). The tool of concept mapping was used for a different purpose to interviews and questionnaires. While interviewing and surveying at the start and end of the workshop were a form of pre-assessment and summative assessment, concept mapping was a tool that provided data throughout every point of the workshop process.

As participants created their concept map at the beginning of the first workshop their existing knowledge was uncovered. As the concept map was updated after every workshop, changes in thinking were shown as they occurred. Concept maps were the only tool used that could pinpoint when changes in thinking had occurred. Novak’s (1998) concept mapping method was selected as a tool to enable participants to show the development of their understanding of FR over time.

Concept maps are a type of graphic organiser that can be used to help organise and represent knowledge of a subject. They are distinguished from other types of graphic organisers “by the
use of labelled nodes denoting concepts and links denoting relationships among concepts” (Nesbit & Adesope, 2006, p. 415). Concept maps begin with a primary concept, then branch out to show how that primary concept can be broken down. Figure 12 is a concept map created to explain concept maps.

Figure 12. Concept map of concept maps (Zeilik, n.d. p. 2).

Concept mapping is used as a tool to track understanding, encourage reflection and highlight connections between concepts. Concept maps “play a key role as a tool to represent knowledge held by a learner, and also the structure of knowledge in any subject matter domain” (Novak, 1998, p. 31). They are used to “activate and elaborate on prior knowledge, to support problem solving, promote conceptual thinking and understanding, and to organize and memorize knowledge” (Zwaal & Otting, 2012, p. 104). The use of concept mapping has been shown to have a positive effect on critical thinking (Yue, Zhang, Zhang & Jin, 2017). It is an effective strategy for learning how to find and evaluate information (Rivera & Romero, 2016) and can be used to evaluate the learning-teaching process (Bittencourt, Nóbrega, Medeiros & Furtado, 2013). Nesbit and Adesope (2006) conducted a meta-analysis of 55 studies involving 5,818
participants from Grade 4 students to postsecondary. The studies analysed concept maps used in a wide number of domains such as science, psychology, statistics, and nursing. Concept mapping activities were found to be more effective for retention and transfer of knowledge than comparable activities such as reading passages from texts or attending lectures. These benefits were seen across a wide range of settings, ages of students and subject areas.

Novak developed the concept mapping technique in 1972 to help students represent their emerging science knowledge (Novak & Musonda, 1991). Concept maps are typically used to help learners record their prior knowledge of a subject area, add their new knowledge, and make changes as their knowledge structure changes over a period of time. Concept mapping is generally used to represent a fixed body of knowledge, allowing maps to be assessed by their content, structure and connections. For example, a concept map on the nervous system can be assessed as being correct or incorrect, and one concept map could be deemed better than another concept map if its structure and connections showed a deeper understanding of the nervous system. According to Novak (2002), concept maps can also be used for the purpose of identifying new areas of understanding and inquiry within a new domain. Unlike the traditional use of concept maps within a fixed body of knowledge, my study uses concept maps to show the development of a concept for which there is an undefined and amorphous body of knowledge.

The aim of the workshops was not for participants to become skilled at using concept maps. While concept maps can improve knowledge retention, the purpose of concept mapping in my project was not to see which participant was able to recall all of the information learned. Further to this, there was no benefit to the project in evaluating the concept maps by scoring and ranking them based on their features. Rather, concept maps were used as a tool to track the changing thinking of participants over the course of the workshops. The purpose was to make the thinking of all participants visible; to help participants link prior knowledge to new understanding; to show a change in thinking over the course of the workshops and pinpoint when this occurred; to scaffold the thinking of participants as they made connections between workshop areas and their prior knowledge; and to provide a way for participants to evaluate the significance of their new understanding. Therefore, the concept maps were not assessed at the end of the workshops, but were instead used as a tool to support and scaffold the workshop participants’ thinking, enable the participants to select key proposition statements, and allow the researcher to see the thinking of workshop participants at any point in time.
In the following section, a selection of participants' concept maps are included to illustrate how concept maps were used in the workshops. All pre-workshop and post-workshop concept maps are included in chapter four.

Note: As the concept maps were created on A3 paper, some of the concept maps included are challenging to read due to size limitations. The original scanned images of all post-workshop concept maps are included as attachments to this thesis.

3.13.4.1 Use of concept mapping in workshops

![Concept Map](image)

Figure 13. Emma’s pre-workshop concept map.

During the first workshop, participants were introduced to Novak’s (1992) concept mapping method. After analysing pre-created concept maps, they created their own on an unrelated area of interest. These concept maps were analysed to ensure that all participants felt confident in recording their thinking using this tool. Participants then created a concept map showing their pre-workshop understanding of FR. FR was the primary concept, with participants adding their own secondary and tertiary concepts based on their individual prior knowledge. After each workshop, participants had time to reflect on their concept map, and add to, subtract from, or create a new concept map to reflect their developing understanding. Changes made were highlighted in different colours each week, as shown below. This provided greater context to the concept maps and enabled me to identify when changes were made during the workshop.
Table 6

*Concept Map Key*

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Workshop title</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concept mapping</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>21st century skills</td>
<td>Light Yellow</td>
</tr>
<tr>
<td>2</td>
<td>Digital Fluencies</td>
<td>Blue</td>
</tr>
<tr>
<td>3</td>
<td>Wicked Problems</td>
<td>Pink</td>
</tr>
<tr>
<td>4</td>
<td>Supporting future-oriented teaching and learning</td>
<td>Bright Yellow</td>
</tr>
<tr>
<td>5</td>
<td>Student wellbeing</td>
<td>Green</td>
</tr>
</tbody>
</table>

*Figure 14.* Kent’s post-workshop concept map.

This process was repeated after each workshop to ensure that individual participants could reflect on how their knowledge was growing and changing throughout the workshop series. The
colour-scheme enabled participants to quickly see when their greatest change in thinking occurred and to see connections between workshop areas. The data gathered from concept maps was used by both the project author and the participants. The project author used the concept maps to inform the workshop facilitators of the current thinking of the workshop group, and participants used their own concept maps during the final workshop to determine their beliefs about the most important things needed to be FR. Participants were also able to explain the changes in thinking that their concept maps illustrated during their post-workshop interviews.

The tool of concept mapping fits within the framework of expansive learning as it makes each individual’s thinking visible. Concept maps are a useful tool to make participants’ thinking visible, as they can be considered as accurate reflections of their authors’ cognitive structures (Jonassen, 1992). Stahl (2005) explains that building a shared understanding of comprehensible issues involves the expression of individual understandings by using psychological artefacts such as concepts. By promoting reflective awareness through the creation of concept maps, “the processes of communication and sharing of knowledge, especially in heterogeneous communities, can be qualitatively improved to stimulate the emergence of new knowledge” (Novak & Wurst, 2005, p. 107).

3.14 Data analysis

Robson (2002) suggests that data collected will not immediately present simple conclusions, so the messages within the data "need careful teasing out" (p. 387). He suggests doing this through the use of coding, which is a tool used to identify themes from data collected. Coding is the “process of sorting your data into various categories that organize it and render it meaningful” (Loftland, Snow, Anderson & Loftland, 2006, p. 200). Open coding is a technique drawn from Grounded Theory methodology (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Researchers attempt to use open coding to identify the meaning within data without any preconceived notions of what the data will show. Open coding is said to be ‘grounded’ as it emerges from ‘the ground up’ rather than being derived from theory (Loftland et al., 2006). Open coding was applied to the pre-workshop and post-workshop interview data. It was also applied to the primary, secondary and tertiary proposition statements selected by the workshop group to determine the level of collective understanding reached, and was used when analysing all of the data sets that each participant had generated to create individual vignettes. The open coding process helped me to synthesise the data and consider its meaning.
3.14.1 Coding of interviews

Data from the pre-workshop and post-workshop interviews was transcribed from the digital recordings made. As well as checking the accuracy of the transcripts myself, participants were sent their transcripts to check. Transcribing the interviews was important, as transcriptions record the direct words of a participant, rather than relying only on the researcher’s interpretation of what was said (Hennink, 2013). The use of open coding methodology involved reading all of the pre-interview transcripts three times. I read the transcripts three separate times as Marshall and Rossman (1999) argue that researchers can only fully uncover the meaning in the data by "reading, reading and reading" (p. 153). Each of the three readings happened on different days, so that data could be viewed afresh each time. In my first reading, the transcripts were skim read as I attempted to approach the data with an open mind.

I tried not to read with preconceived ideas based on the literature and the themes I was expecting to see in mind, but also to notice other aspects raised in the data in an effort to "focus on the meaning" (Charmaz, 2000, p. 510) that the data contained. However, qualitative research is “textually mediated by the author and personally mediated by the reader” (Blair, 2015, p. 23). As this study was a type of practitioner research, I was both the author and reader/researcher, which made it very challenging to remain purely objective in the coding process. While I was not a workshop group participant, I carried out the interviews; I was there during the workshop group discussion; I transcribed the interviews, and I coded and analysed the data. While this reduced my level of objectivity when attempting to make sense of the participants’ data, my high level of mediation within the research helped me to develop an authentic account of the participants' perspectives. As Blair (2015) explains, “researchers may subjectively interpret data in their attempts to reify it” (p. 25).

Merriam and Tisdell (2015) recommend that when “you are just beginning the analysis, be as expansive as you want in identifying any segment of data that might be useful (p. 204)”. On my second reading, I highlighted different kinds of key words that appeared in the data. These were recorded as codes in the margin, which was an important step in determining my categories. Corbin and Strauss (1990) encourage researchers to code data that is "conceptually similar” (p. 12). Glaser (1978) proposes constant comparisons of data and categories whilst Corbin and Strauss (1990) suggest that “the research process itself guides the researcher” (p. 6). On my third reading, I looked for patterns emerging from the coding and grouped these
into labelled themes, comparing and noting similarities and differences between workshop participants’ data.

After the process of open coding had uncovered repeating themes in the data, the amount of repetition of themes between the workshop participants was analysed to determine the degree of collective understanding that existed. The workshop group was considered to be in agreement if at least 50% of the workshop participants (5/9) referred to the same theme in their responses.

This process was used for both the pre-workshop interviews and the post-workshop interviews. In addition to open coding, I quantified data from the interval rating scales in the pre-workshop and post-workshop interviews by deriving the mean, median, mode and range as a form of simple quantitative analysis. The findings are shared in the Results and Discussion chapter.

3.14.2 Proposition statement selection

The six workshops attended included time for discussion between the facilitator and participants, and between participants themselves. In the first workshop, focused on 21st century skills, groups of participants debated which of the 21st century skills were most important for students to be focusing on, then justified their selection to the other groups. In the workshop on wicked problems, a debate about the underlying purpose of education surfaced at least four times during the workshop. The facilitator’s use of curious questioning encouraged participants to examine their preconceived notions about the purpose of education, and in particular to consider whether the purpose of schools is to prepare students for a job. The opportunity for discussion, debate and the consideration of multiple perspectives was a component of each workshop.

After the workshop series had concluded, the workshop group met once more. The purpose of this meeting was to determine whether a collective understanding (“an understanding shared by every member of a group of people”) had been reached between the workshop group. I considered multiple ways of trying to determine whether the workshop participants had come to a collective understanding of FR (e.g. round-table sharing of concept maps, group discussion, ranking of key workshop ideas). Due to time constraints, the round-table sharing of concept maps and ideas learned from the workshops was not possible. Whilst group discussion gives the chance to debate the merits of different ideas, it can also lead to dominant personalities
taking over the conversation and ensuring that their ideas are voiced while others may be silenced. The workshop group was made up of participants from multiple cultural backgrounds, and cultural norms as well as individual personality differences were likely to influence the outcome had group discussion been selected. The ranking of key workshop ideas is also open to manipulation – that is, that if a majority agree on something, those with less strongly held opinions may be more willing to agree with the majority regardless of whether they genuinely share the same opinion or not.

After considering these options, I thought carefully about a way to uncover each individual’s own ideas about what they felt were the most important things a student leaving Kristin needed to be FR. One way for participants to share the individual understanding they had reached was through the selection of key proposition statements contained in their concept maps. These statements reflected what they felt were the most important things needed for a student to be FR. This required participants to evaluate their concept map, make proposition statements which highlighted their most important understandings, then rank these and share them in a Google document.

A proposition statement is a coherent phrase or sentence made by joining nodes and links from within the concept map. “A concept map consists of nodes representing concepts, objects, or actions, connected by directional links defining the relationships between and among nodes. Together nodes and links define propositions, which are assertions about a topic” (Alpert, 2005, p. 223). In the example below, the nodes are Future Ready, future, and uncertain. These concepts are connected by the directional links and the associated linking words accept and is. Read in the direction of the links, the proposition statement shown is Future Ready students accept the future is uncertain.
After learning how to find proposition statements within their concept map, the workshop group chose their three key proposition statements and recorded these in a Google document without discussion or debate. In this way, each individual’s understanding was shown, and the overlap or lack thereof between proposition statements was analysed using open coding to determine whether a collective understanding had been reached. The results are shared and discussed in chapter four.

### 3.14.3 Coding of proposition statements

The same open coding process used for interviews was also used for the proposition statements. However, the proposition statements were recorded by workshop participants themselves rather than transcribed. To determine the level of collective understanding shown by the proposition statements, the same criteria was used as that used in the interviews (at least 50% of the workshop participants (5/9) referred to the same theme in their responses).

### 3.14.4 Determination of level of collective understanding

After the coding process was complete, I compared the themes that emerged from the post-workshop interviews and the proposition statements. The occurrence of themes was quantified based on the number of times individual participants made reference to each theme. Similarities in the themes that occurred were then compared, and the number of participants who referred to each theme in either the proposition statements or the post-workshop survey were totalled. Once the key themes from the post-workshop interviews and the proposition statements had
been compiled, a summary of the collective understanding reached was developed and the workshop group met again to consider its accuracy. This process is detailed in section 4.4.

3.14.5 Vignettes

Bryman (2012) suggests that the coding process can fragment and decontextualise the data being studied. To minimise the chance of this occurring, all of the data sets for each individual participant were analysed. Following the interpretivist approach, I took the multiple sources of data collected (concept maps and explanations, proposition statements, pre-workshop and post-workshop interviews, post-workshop surveys) and entered them into Dedoose, which is an application used for analysing qualitative data. Codes were created for each participant and the data in each code was analysed for themes. Themes that occurred were explored in individual vignettes. Vignettes were written to explore the key understanding that each participant reached and to ensure that participants and their learning in the workshops could be seen holistically rather than as mere data sets. After the completion of the vignettes, each participant was sent their vignette and asked to comment on its validity, to ensure that they were happy that the vignette was an accurate interpretation of their workshop journey. Changes were made based on the feedback provided. The edited vignettes were shared with the participants and final approval was received for each vignette.

3.15 Validity and reliability

Wellington (2000) defines validity as “the degree to which a method, a test or a research tool actually measures what it is supposed to measure” (p. 30). Bryman (2008) suggests that it is one of the factors which determine the integrity of a study’s findings. There are two main kinds of validity to consider: internal and external. Internal validity is concerned with the research project’s design and ensuring there are “no errors in the research design” (Davidson & Tolich, 2003, p. 32). External validity considers the degree to which the findings of the research can be generalised to people beyond the study (Bryman, 2008). The concept of validity assumes that there exists a single ‘truth’. However, the underlying assumption of the interpretive paradigm is that there is “not one truth but multiple perspectives on reality when examining social phenomenon” (Hennink, 2013, p. 176).
Triangulation requires the “use of more than one method or source of data in the study of social phenomenon so that findings may be cross-checked” (Bryman, 2008, p. 700). I used triangulation to strengthen the validity of my results, as triangulation adds rigour to the research by exploring phenomenon from within and across research strategies (Bryman, 2012; Hennink, 2013). The triangulation in my research involved the use of multiple tools to ensure that participants were able to accurately present their views. Cross-method triangulation was used to look for consistency of data within each separate method used (Bryman, 2012). Themes identified in the post-workshop interviews were compared to the themes that emerged from the proposition statements to triangulate the results and examine similarities, contradictions and inconsistencies. The use of qualitative research methodology to answer my research questions also improved validity due to the flexible nature of the research (Cohen et al., 2007). I was able to have follow-up conversations beyond the post-workshop interview to explore in greater detail the conclusions which I had drawn from the data and was able to account for abnormalities in the data by talking directly to the participants to whom the data related.

Research bias occurs when those carrying out research influence the results in order to portray a certain outcome (Shuttleworth, 2009). Bias such as design bias, measurement bias and interviewer bias can occur at different stages in the research and affect the validity of the study’s results. Shuttleworth (2009) argues that “in many disciplines, it [bias] is unavoidable. Any experimental design process involves understanding the inherent biases and minimizing the effects. [...] In qualitative research, it is all about understanding that it will happen” (p. 2). As an employee of the school in which the research took place, it was not possible to remove bias altogether. However, I took a number of steps to reduce bias throughout the research project.

Bias can be inadvertently introduced by an interviewer (Cohen et al., 2007). This occurs when the interviewer subconsciously gives clues with their gestures, tone or body language “that subtly influence the subject into giving answers skewed towards the interviewer’s own opinions, prejudices and values” (Shuttleworth, 2009, p. 6). My study aimed to reduce the level of bias in my pre-workshop and post-workshop interviews. Cohen et al. (2007) suggest bias can be reduced by ensuring that “answers that support the preconceived notions” (p. 150) of the researcher are not sought. To do this, I ensured that the questions in the pre-workshop interview and post-workshop interview were open-ended and scenario-based. To avoid “misunderstandings on the part of the respondent of what is being asked” (Cohen et al., 2007, p. 150) the pre-workshop and post-workshop interviews included context-specific questions.
This gave participants freedom to share their own understanding, as well as a personal context to help them make sense of what was being asked. I also conducted all of the interviews in the workspace of the person being interviewed to minimise discomfort and help them to answer the interview questions from their own knowledge and understanding. Another cause of interviewer bias occurs when there are “misperceptions on the part of the interviewer of what the respondent is saying” (Cohen et al., 2007, p. 150). When interviewing participants, I followed the interview questions closely (refer to Appendix 2 and 3) to avoid leading the participants to a particular response. The only time I deviated from the interview questions was when a participant’s response was not clear, which I responded to by asking for further clarification. The interviews were piloted with a staff member who wasn’t involved in the workshop group in an attempt to reduce bias.

Measurement bias can arise from errors in the data collection phase. Due to a fear of being judged, people are unlikely to give socially unacceptable answers when interviewed face-to-face (Shuttleworth, 2009), which can skew the results of a study. To avoid measurement bias in my whole school survey, respondents were given the option of anonymity (refer to Appendix 1). This provided a greater likelihood of honest responses and was shown to be effective by the range of responses gathered, which included those who showed confusion or cynicism towards the FR tagline.

The most significant possibility of bias occurring arose from my role in the research. As my study was practitioner research, I had differing levels of involvement in the workshops. My involvement was a possible source of selection bias, interviewer bias and response bias. I addressed this in a number of ways. Selection bias is addressed in section 3.9, and interviewer bias is addressed above. Response bias is “where the subject consciously, or subconsciously, gives responses that they think that the interviewer wants to hear” (Shuttleworth, 2009, p. 7). This was reduced through clear communication with the workshop group about the purpose of the workshops and was further reduced by the iterative nature of the project. As the workshop direction changed through the interaction of participants, the outcome was not predictable from the outset. Participants were unable to know the understanding that would be reached beforehand, so weren’t able to try to frame their post-workshop interview responses to include this understanding.
While I engaged the workshop facilitators and gave them an overview of content that may be covered, my own role within the workshops was limited in an attempt to reduce bias. Other than the first and the final workshop which I facilitated, I had a minimal role in the workshops. My role was to introduce the workshop facilitators, video the workshops and the discussion that took place, and thank the speaker at the conclusion of the workshop. Once the workshop speaker had finished, I gave out concept maps for updating. I intentionally refrained from involving myself in the discussion or conversations that took place to reduce my influence on the direction of the workshop group’s thinking. Further to this, workshop facilitators began their sessions by ‘checking in’ with the workshop group to ascertain their current thinking and co-construct the direction that the workshop would take, rather than solely relying on my knowledge of the workshop group’s current thinking.

“Qualitative research is less likely to be able to have its analysis and findings replicated due to the interpretative approach used by individual researchers” (Edwards, 2011, p. 48). Because of this, it is imperative that a study’s design ensures the reliability of its results. Qualitative researchers should strive for reliability through “replication in generating, refining, comparing and validating constructs” (Cohen et al., 2007, p. 148). In my study, clear explanation of my research procedures helped support the reliability of my research design. The semi-structured interviews increased the study’s validity by using identical questions with each of the nine participants. Further to this, all interviews were digitally recorded to accurately record what was said. The transcriptions were sent to the participants to review, which improved the reliability and validity of the responses. While bias throughout the project was present, I took a number of steps to recognise this and reduce its effects on the project and its conclusions.

3.16 Ethical considerations

Research can cause harm to participants if ethical considerations are not properly addressed (Bryman, 2008). According to Bryman and Bell (2007) there are ten critical ethical considerations. These ten considerations contain significant overlap, so some are addressed together.

The most significant consideration is to ensure that research participants are not subjected to harm. Related to this is that the anonymity and the protection of the privacy of individuals participating in the research should be ensured. While participants within a research project
would usually remain anonymous throughout the project, anonymity would be a significant hindrance to meeting my project’s aims. As the aim of the project was to develop a collective understanding of FR amongst a representative group of staff, it was important for the wider staff to know who was involved in the group. Keeping the workshop group’s identity anonymous would be in opposition to another ethical consideration, that communication in relation to the research should be honest and transparent. Sharing the identity of the workshop group enhanced the transparency of the project and allowed the wider staff to provide their own input into the workshops by discussing the workshop content with the workshop participants. A forum post was therefore shared on the staff forum to let the wider staff know who the workshop participants were. Workshop participants were made aware of this requirement in the information sheet for participants (see Appendix 5). While the participants were made known within the school, pseudonyms have been used in this thesis to protect their identities and images showing research participants have been blurred, as this thesis will be available to the general public. Participants were not subjected to harm in any way through participating in the research project.

The project didn’t involve any forms of deception or exaggeration about the aims and objectives of the research. The chance of deception was reduced by submitting an application for Ethics approval and having it approved by the Unitec Research Ethics Committee. Further to this, participants were given an information sheet (see Appendix 5) about the study to ensure the aims of the project and expectations of participants were clear. Full consent was obtained from the participants prior to the study (see Appendix 6). This consent was given based on the participants receiving truthful and relevant information so that they could understand the nature of the research, including the likely time commitment the project would take. This honest and transparent communication enabled them to make an informed decision on whether or not to participate, which further reduced the possibility of deception and minimised the possibility of harm. Participants were given information sheets (see Appendix 5) and consent forms (see Appendix 6) stating that participation was voluntary and informed (Bryman, 2012). By signing the consent form participants confirmed their understanding of explanations provided and their acknowledgement of the ability to withdraw from the study if they wished to do so.

Adequate levels of confidentiality of the research data were ensured. Confidentiality was maintained in my research by safely storing hard copy records and transcripts in a locked cabinet and storing electronic files in password protected folders. Electronic files were
accessible only to the project author and the project supervisor. Intentionally providing misleading information and misrepresenting primary data findings in a biased way was avoided, and ways to minimise bias have been considered in previous sections of the Methodology chapter.

A further consideration is that affiliations in any form, sources of funding and possible conflicts of interests need to be declared. As a current Kristin staff member, I worked with colleagues (the workshop participants) throughout the project. While I was involved as a facilitator of the workshop sessions, I was not involved as a participant. I ensured that the workshop participants were free to discuss the material in an open and honest way without my input. I clearly stated in the first workshop that I had no preconceived understanding that I expected the workshop group to reach, and that the workshop series was a genuine chance to explore ideas rather than feeling compelled to come to an understanding that someone else already has. This sufficiently reduced the risk that my role would adversely influence the thinking of the workshop group. Further to this, I have been clear about Kristin School funding the project by paying for the workshop facilitators. There was one potential source of a conflict of interest, which was my leadership position (Year 1 Dean) in relation to other staff members. While my leadership position has influence over five teaching staff within the school, these staff members did not participate in the project. My school leadership position had no influence over any of the staff members who were involved in the workshop group.

Another consideration is that respect for research participants should be prioritised. This was shown throughout the workshop process, and in particular when video footage was shared with the wider staff. On three occasions sensitive content was shared in the workshops and captured on video. In each case, I conversed with the workshop participant who had shared the content and discussed whether they would like it to be removed from the footage shared with the wider staff. In two cases, the participants were happy to have the content included, so the content remained. In the third case, the participant asked for the content to be removed, and it was. The content removed had no bearing on the outcomes of the project. In this way, respect for research participants was considered throughout the project.

Any New Zealand initiative in education will impact Māori. Although the number of Māori staff and students at Kristin is low, it was important to remain aware of a Māori perspective throughout my research. As schools can become sites for reproduction of cultural and social
inequities (Hogg, 2014), it was important that my research was examined from a Māori-centric perspective as well as from my own perspective. Through consultation with a Māori teacher at Kristin I was able to consider a Māori perspective throughout my research. Principles of Kaupapa Māori were discussed in relation to my research, although no Māori staff members were directly involved in the project. Māori learners are considered Priority learners (Education Review Office, 2012, p. 4). Priority learners are groups of students who have been identified as historically not experiencing success in the New Zealand schooling system. Part of the Ministry of Education’s strategy to accelerate success for Māori learners is to create “strong educational pathways [...] during a Māori student’s educational journey” (Ministry of Education, 2013, p. 24). The exploration of what it means to be FR included discussions around the educational pathways that are taken during students’ educational journeys. An exploration of what it means to be FR is relevant to the education system as a whole, which will consequently have an impact on Māori. Whilst the project had no direct impact on Māori, its findings will be relevant to Māori in the discussion of ways to support future-focused learning within New Zealand’s education system.
4. Findings & Discussion

In this chapter, the findings of the research are reported and discussed. These two areas are combined so that results can be contextualised within the project and discussed in relation to the research questions. The aim of the research project was to develop a collective understanding of the FR tagline amongst a representative group of Kristin staff. The results of this process are documented and discussed. The chapter begins with a series of vignettes that explore the workshops and their impact from the perspective of each participant. Data from the pre-workshop interviews are then examined, followed by a comparison of the pre-workshop and post-workshop interview data. Next, the results of the proposition statement selection will be shared, and the process that was used to determine the collective understanding shared by the workshop group. While the workshop group form the key activity system analysed, interactions between the workshop group and the wider staff are also explored in accordance with the CHAT framework. The effectiveness of a workshop approach in developing a collective understanding is then discussed, and finally the personal and professional impact of participation in the workshop group is considered.

The discussion is organised around the research questions:

1. To what extent does participation in a cross-faculty network of staff result in a collective understanding of a complex pedagogical concept, and how effective is a workshop approach in supporting this?
2. What was the professional and personal impact of this participation?

Before sharing the results, it is important to acknowledge that the research project that produced the interview, concept map and questionnaire data and my examination of the data are grounded in my interpretivist view. My interpretive perspective and the use of practitioner research have resulted in a level of subjectivity in my project. Heshusius (1994) suggests that researchers “should embrace a participatory consciousness - recognising that they are not separate from the world in which the data are produced” (Blair, 2015, p. 14). I was situated within the project and while I attempted to remain open and receptive to the data that emerged and to avoid drawing conclusions based on my own views, I found this very challenging. Rather than ignoring this challenge, I embraced it by recognising the unique relationship that exists between
all of the subjects in the research project, including the relationship between myself, the workshop participants and the data that emerged. According to Blair (2015), “this is not generally thought to be a bias that needs to be ‘corrected’, rather it is seen to be beneficial that the analyst is able to use their own unique skills, talents and expertise” (p. 15). Pallas (2001) suggests that the clear articulation of a researcher’s epistemological framework is central to educational research.

4.1 Vignettes

Interpretivist researchers are concerned with individual participants and the way in which they interpret and make sense of the wider world around them (Cohen et al., 2007). The interpretative view argues that knowledge is gained through interaction within a social context as a whole, not in isolation. This view is aligned with a CHAT framework and the socio-cultural approach outlined by Cohen et al. (2007), who explain that “the social world can only be understood from the standpoint of the individuals who are part of the on-going action being investigated” (p. 15). Further to this, Creswell (1994) argues that those within the social context of study actively construct the reality being researched. To understand the impact of the workshops, it was therefore important to consider each workshop participant as an individual and consider how they were impacted by and had an impact on the workshop group. The following series of vignettes focus on each workshop participant’s individual journey. They capture key themes that emerged through analysis of the data, including pre-workshop and post-workshop interviews, concept maps, proposition statements, post-workshop surveys and follow-up discussions about the project’s impact. Rather than summarise the data, key changes in thinking are highlighted and the reasons for these changes explored. Both research questions are addressed within the vignettes.

Pre-workshop and post-workshop concept maps for each participant are included before their respective vignettes to provide greater context. The highlighted elements of the concept maps show when each change to the concept map was made, as illustrated in Table 6 previously. To give greater context in which to understand each participant’s responses, the department the participant works within, the number of years they have worked at Kristin, and their number of years of experience are outlined before each vignette begins.
Workshop participant 1: Emma

Figure 16. Emma’s pre-workshop concept map.
Throughout the pre-interview, Emma laughed nervously. She hesitated when answering questions, frequently pausing to gather her thoughts. When asked what she would say to a prospective parent inquiring about the meaning of Future Ready, Emma responded, “We give them [students] the skills that they need, including digital skills.” She expressed a lack of confidence (IC(P)=2) about sharing her understanding. Emma felt she would be slightly more confident (IC(C)=3) if she was to share with a colleague about how Kristin prepares students to be Future Ready, stating that “Kristin has really good digital technology and availability of resources around digital tech.”

During the first workshop, which focused on 21st century competencies, Emma’s initial thoughts on future readiness were profoundly challenged. One of the syntheses of 21st century competencies she read resonated with her so much that she discarded her initial concept map and proceeded to summarise the key points of the study into a new concept.
map. The study categorised the 21st century competencies into three key areas: cognitive competencies, interpersonal competencies and intrapersonal competencies. These areas formed the basis of Emma’s new concept map, and most of her thinking over the remainder of the workshops was added into these categories. Discussing her concept map, Emma shared, “My concept map changed quite a lot from the start of the very first session, in that I actually changed the entire map. I thought it was making sure that they had some of the skills required […] I think the biggest difference from what I started with to what I’ve got now is that I have focused on what Future Ready requires rather than just how it can be defined.”

After the final workshop, Emma’s primary proposition statement (what she felt was the most important factor for a student to be Future Ready) was “To be future ready requires cognitive competencies, interpersonal competencies and intrapersonal competencies.” In her post-workshop interview, Emma spoke succinctly, with confidence and clarity. She elaborated on her primary proposition statement, explaining that “Future Ready is about developing key competencies that [...] support students to be citizens that can not only contribute to society but actually help to create the future society.” She expressed greater confidence (FC(P)=4.5) about sharing this understanding with a prospective parent, and her confidence in sharing with a colleague about how Kristin prepares students to be Future Ready also increased (FC(C)=4).

Reflecting on the effectiveness of the Professional Learning workshops as a way to develop a collective understanding of Future Ready, Emma shared a message similar to many other workshop participants. She felt that the effectiveness of the group lay in the diversity of the workshop staff, stating that “This particular group was very effective because I believe we approached the concepts from different perspectives… I think that although we still don’t have – and it might be impossible to have one clear line that is Future Ready - I’m quite confident that as a workshop group we’ve definitely developed our understanding of what it actually means.”
Workshop participant 2: Frances

Figure 19. Frances’ pre-workshop concept map.

Figure 20. Frances’ post-workshop concept map.
Frances was already hard at work when I arrived at her corner office for our 7:45am pre-workshop interview. Sitting behind her desk, she asked me to take a seat on a comfy armchair while she sent off the email she’d been writing. As a member of the Senior Leadership Team (SLT), I was excited to hear Frances’s thoughts on what it means to be Future Ready. I began the interview with the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’ Frances’s response focused on the wider school and its operation as an organisation: “As a school, we are modern and future-focused. We’re nimble as an organisation. Nimble and adaptive, continually innovating, at the leading edge [...] In my role around the SLT we’re continually looking for first-mover status. Essentially what you’re trying to communicate to parents is a way of operating and a way of thinking that gives direction and impetus.”

Responding to the second question, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?’, Frances shared about how she would emphasise the necessity of all staff buying into a shared vision for the school. “You need to start with the staff first and you need to do all staff, not just teaching staff. And I think that’s really critical, and then when the staff are living it, then they’re teaching it, then your school is embodying it [...] if I was talking to a staff member, I’d always try to pick a current initiative which is tangible and if it was a support staff member, like someone here, that’s the sort of thing that I’d be saying to them.”

Frances’s concept map, which initially focused on Kristin as an organisation, had multiple concepts added to it over the course of the workshops. Reflecting on these changes, Frances said, “As I have a team that come from commercial backgrounds we had a slightly different perspective. My first concept map is narrower in thinking - I was looking from the organisation’s point of view - what would a Future Ready Kristin look like? The biggest change has been the added dimensions of staff - both teaching and support - and students. This perspective has deepened and broadened.” Frances found that Dr Emma Woodward’s workshop on wellbeing resonated strongly with her and took her focus from seeing Kristin as an organisation, to seeing it as an organisation made up of individuals. In particular, the
focus on mindfulness, utilising strengths and helping students to lead a more balanced life impacted her thinking. “The additional areas which have been added [to my concept map] are more at a micro level, as opposed to my initial macro level thinking. One thing on a micro level is student wellbeing. We need to be a lot smarter around balance and the demands we’re placing on students. Emma’s talk made me think more about the individual and how our strategic projects actually affect the individual students.”

This enhanced focus on student wellbeing was reflected by multiple branches in Frances’s final concept map. Her proposition statements referred to a number of areas associated with student wellbeing: “A future ready student is resilient, fully utilising their 24 strengths with a focus on wellbeing, mindfulness, and meaningful, authentic, real (not digital) relationships.” To get an understanding of what action should be taken following on from the workshop series, I asked each participant, “What should Kristin focus on to make our students Future Ready?” Frances’s response was clear: “Pastoral care and wellbeing is a priority."

Frances’s shift in focus was highlighted by her responses in the post-interview. Responding to the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’, Frances replied, “I think I would focus more on agility, abstract thinking, thinking outside the lines, preparation for life - I would focus more on robustness and adaptability for change. Probably over the course of the speaker series – it sounds strange because I was aware of it beforehand - but it makes me think about how well we’re delivering it in terms of the wellbeing – we mention our wraparound holistic care – that focus on that, robustness, nimbleness and adaptability to change.”

Frances answered the second question, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?” by reflecting more on what she’d learned from the other participants than from the workshop facilitators. “I think that I’ve learned a lot more about the approaches to learning they do in the senior school, or the holistic view that Olivia talked about in her EOTC (Education Outside The Classroom) – I think when I look at it, I’d say we’re doing it through the PYP (Primary Years Programme), MYP (Middle Years Programme) and DP (Diploma Programme) – through the IB (International Baccalaureate)
curriculum and inquiry based learning, so I think that’s something that allows us to be Future
Ready, rather than prescriptive content. It’s how you learn, and what you ask about. That
curiosity about the outside world.”

Thinking about the workshop series as a whole, Frances paused to consider what had been
of most value to her. She closed the interview with this reflection: “It reinforced to me how
important it is to step out of your everyday job and spend time looking at the bigger issues.”
Workshop participant 3: Michelle

*Figure 21.* Michelle’s pre-workshop concept map.
The class budgie tweeted incessantly as he scurried back and forth across the floor of his cage, occasionally glimpsing across the room to where Michelle and I sat. Michelle paused for a minute after the first question, gathering her thoughts about what she would say to a prospective parent inquiring about the meaning of Future Ready. “I would probably say something along the lines of, that, one of the school’s primary goals is to have every child ready to go out into the world...¹ The modern world, which is ever changing.” She then went on to answer the second question, “What would you say if a colleague asked you, “How do you prepare students to be Future Ready?”” by highlighting confidence with digital technology as one of Kristin’s strengths. “One of the things that we are trying to do to prepare our students to be Future Ready is we’re getting them to be, um, literate with technology [...] And also, we’re trying to instil in them a love of lifelong learning.” Michelle started the

¹ Ellipses are used here and throughout the vignettes to indicate a pause by the speaker.
workshops with an understanding that the world is changing, and people cannot predict exactly what the future will look like; what she was not confident about was what we can actually do to prepare students for this uncertain future.

Professor Ally Bull’s workshop, where participants learned techniques to take multiple perspectives and ask curious questions, was particularly significant in instigating a change in Michelle’s thinking. Part of the session involved participants sharing a personal or professional problem with the group. The other workshop group members would then ask curious questions about the problem, which are designed to encourage the consideration of multiple perspectives and remove the questioner from their emotional attachment to the problem. The person who shares the problem simply records the questions asked, rather than responding to them, then is able to think further on these questions in their own time. “It was being questioned by others without having to respond that really stuck with me, actually looking at other perspectives… I liked the idea of questioning to open up possibilities, and reflecting on opposing ideas,” Michelle explained.

Michelle felt that this skill was something that her students would benefit from, so after the workshops she worked with her colleagues to create a programme aimed at developing curious questioning skills in her Year 5 students. “The whole independent thinking skills and individual perspective was really important, coupled with accepting opposing ideas, so they [students] need to be able to hold multiple perspectives. They also need to value their own ideas and accept that they can be different to others, which is actually a good thing,” Michelle shared. Her proposition statements, such as, “A future ready student needs to bring an individual perspective to challenges and be able to question to open up possibilities” reflected the value she placed on this area of the workshops.

While Michelle started the workshops knowing that schools need to prepare students for an unknown future, she was not able to explain ways they could go about this. When answering the first question in her post-workshop interview, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’ Michelle articulated a clear vision for the skills, knowledge and mindsets students would need. “What I would say to them is that we live in a world where the future’s uncertain, and so we have to prepare them for a world that we don’t even know what it’s going to be like.
The way that we try and do that is by making sure that we develop open-minded, creative, curious, outward-looking children who are aware of all the complexities in the world and that dealing with it is not going to be simple. They have to be flexible and adaptable and have a commitment to actually engaging with what they meet and going out there and making a difference. Her response to question two, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?”’ further explained her new understanding: “We’re trying to create people who can discuss and debate constructively and accept diverse viewpoints […] [We] really focus on the learning behaviours and attitudes that they bring to the classroom. Rather than… not rather than, but in combination with building up their skills and abilities and knowledge.”
Workshop participant 4: Louise

Figure 23. Louise’s pre-workshop concept map.

Figure 24. Louise’s post-workshop concept map.
As I entered Louise’s classroom, my eyes were drawn to the beautiful displays covering the walls from floor to ceiling. Amongst the student’s work and inspirational quotes were a number of displays showing students reading under trees, wading in streams and observing wildlife in a swampy marsh. She proudly talked me through one of the projects a student had recently completed, before we switched topics and began the pre-workshop interview. When I asked Louise the first question, “A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’, Louise frowned and slowly replied, “I can’t say what I wanna say, because I don’t know how we’re gonna do that. We can’t stare into a crystal ball. That’s my concern. That’s why I’m so scared about that wording. So that is such a huge calling for us to state that we do that, because we don’t know what’s coming.”

Responding to the second question, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?”’, Louise spoke about the need for students to connect to nature through their learning as a way of combating the negative effects of digital technology. “I think it’s really scary for any of our kids today. They can grab a device and they can see anything. I honestly believe that totally plays mayhem with their whole understanding of how this planet, and us as human beings interact. I’m terrified about all the things they do see. I think it scars so many of our kids. I think we need to make sure that our parents have got locks on computers and they are well aware that our kids are very apt at using them. There’s too much Nature Deficit going on. So here at Kristin, we make sure they are Future Ready by getting the kids out of the school, connecting with nature.” Louise’s concern about the future was evident in her responses to the pre-interview questions, and she was able to discuss these fears with a number of the presenters of the different workshops.

The workshop series reinforced Louise’s belief that students need to be connected to nature through real-world learning experiences. She also found the workshops valuable to her personally. Louise shared that this was because “Many of the pedagogies shared by the presenters gave me hope for the future.” As Louise went through the workshops, she made multiple additions to her initial concept map. While some additions were new concepts,
multiple links between existing areas were added. Louise’s final concept map showed the interconnectedness between the content of the workshops.

Reflecting on the impact the workshops had on her, Louise spoke about numerous ways her thinking had been impacted. “One of the most important things is that we’re not just aiming to make students Future Ready to work, but Future Ready to live. As the next generation are wired to technology, there will be issues with Nature Deficiency, so we need to be learning outside under the tree and learning in nature. Artificial Intelligence is changing life and becoming more human, so we need to focus on soft-skill knowledge, resilience, flexibility in thinking, being reflective and risk-takers to help students cope when they go into a world where everything is changing, and we need to get parents on board with Future Readiness to really make an impact.” Louise became one of the biggest proponents of the workshop group and reported that she shared about the workshop content with other staff on a daily basis. She felt that the wider staff should also view the videos of the workshops, as the content was relevant to all staff members.

At the completion of the workshops, Louise articulated a more positive attitude towards the future. Her selected proposition statements reflected this positivity:

- FR youth are aware of the challenges ahead, embracing them, by actively engaging in positive ways to leave the world in a better place.
- To be FR it is essential that students are creative, intuitive individuals who understand that time is fleeting, appreciate diversity, thrive on challenges and are well versed in relevant technology.

When asked about what had caused her change in thinking over the course of the workshops, Louise explained: “My initial response to Future Ready was not comforting. How can one possibly know the future where life as we know it is constantly changing? The peace of knowing how we fit in the world as a child of the ’80s is very different for our children of the 21st century. Listening and reflecting on ways forward to support our children and develop the ability to live and enjoy the moment of now alongside being ready for curious questions and flipping the mayhem and madness into exciting possibilities is an uplifting and positive shift.”
Workshop participant 5: Kent

Figure 25. Kent’s pre-workshop concept map.

Figure 26: Kent’s post-workshop concept map.
Kent gave me a quick tour of his workspace before we began the pre-workshop interview. From the multiple displays showing the backend of the school website to the whirring servers in the climate-controlled room down the corridor, I became acutely aware of how little I knew of what goes on behind the office doors of the school’s ICT department. As we began the interview, Kent’s expertise in his field became clear as he shared an understanding of Future Ready that was centred around digital technology and the way that competence with digital technology could help students navigate a changing world.

Responding to the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’ Kent replied, “Future Ready is about us saying, well ok, we don’t know what the kids are going to need to know when they start the workforce, and it’s about giving them the foundation in some of these new technologies in the digital areas. Yes computers, yes other devices, whether they go on to be computer people or whether they go on to be business people they’re still gonna need to know these basic computer skills and this is about us preparing them for that future.” In response to the second question, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?”’, Kent spoke about some of the successes of Kristin’s digital technology programme and how Kristin graduates are generally competent users of technology. His initial concept map focused on how Kristin can enhance the digital capabilities of students, so they can actively engage in a digital future. It included references to areas such as the future of work, AI, digital technology and robotics.

Andrew Churches’ workshop, ‘Digital fluencies’, resonated with Kent. While the workshop focused on changes in digital technology and the flow-on effect on education, Kent’s key takeaway was that real-world experiences and real-life connection were the most important things to focus on to maintain wellbeing in a Digital Age. Churches spoke about altruistic giving as being a key to maintaining our humanity and described a school trip which involved building mud-brick homes for the poor in Nepal as an example of ways that the school encourages service to others. Kent felt that these kinds of experiences are increasingly
necessary to help students to connect with others and have life experiences that take them outside of their comfort zone.

Kent’s role involves providing the digital infrastructure for teaching and learning, and ensuring that learning platforms and programmes are fit-for-purpose and functioning correctly. When answering the second question in our post-workshop interview, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?”’ Kent spoke about his role, and how it contributes to student learning. “We’re not directly feeding into the student learning programmes, but it’s something that as a whole staff we need to take responsibility for. As a group we need to have a common understanding and a common goal of preparing our students well for the future. That ties into what we do in ICT, our projects and how we deliver things. There’s a lot of work and behind the scenes prep that we do when teachers are looking at new learning platforms and programmes… our part is to make sure it’s consistent and available for them to use with students. The better we provide that access, the more it’s going to be used by the students, the more benefit they’re going to get out of it.” Aside from learning from the content shared by the workshop facilitators, Kent felt that the chance to interact with other staff outside of his usual context gave him a fuller awareness of what happens within the school. Reflecting on how his practise was influenced by the workshops, Kent said, “I developed a greater understanding of what’s going on within the school and its goals and I’m keeping these in the forefront when working on the website.”

While Kent initially saw Future Ready through a digital lens, his perspective broadened over the course of the workshops. Reflecting on this change, Kent explained: “I initially focused predominantly on IT/digital skills but ended up contextualising this within the 21st century world and balancing it with interpersonal skills, wellbeing etc. with my post-workshop knowledge”. In a follow-up interview after the workshop series was complete, Kent summarised what he felt a Future Ready student would be: “I see that they should walk out the door well rounded – sporting, academic, cultural, service, social and also digital. Students being happy and positive people would be my main goal, ready for the real world. Not afraid of change, understanding it’s a big factor but that being future ready is being ready for change.”
Workshop participant 6: Olivia

Figure 27. Olivia’s pre-workshop concept map.

Figure 28. Olivia’s post-workshop concept map.
Half an hour after her students had left for home, Olivia and I sat in the PE office overlooking the full-size hockey turf. As she sipped from her water bottle, I began the interview by asking, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’ Olivia responded by talking about how different the employment landscape is now compared to when she graduated from high school 11 years earlier. “There’s a lot of jobs now that I wouldn’t have known would exist back then,” Olivia explained, so Kristin’s role is “to teach them [students] in a way that they are actually going to be ready for the future. Kristin is trying to read into the future and predict what is going to be out there and prepare the kids for those possibilities.” Olivia’s confidence in her response was low (IC(P)=2), and she later admitted to me, “I’m still trying to get my head around it myself! But it would be nice to have a bit more of an understanding behind it [Future Ready].”

Olivia came into the workshops with an underlying belief that a school’s primary responsibility is to prepare students for the jobs they will eventually work in. Her initial concept map reflected this belief, and included three primary concepts: Jobs, technology and preparation. When asked in the pre-interview what she would say to a colleague to explain how Kristin prepares students to be Future Ready, Olivia spoke about the use of technology: “A lot of the preparation in helping kids to become future ready is giving them… technology and actually utilising it in our classroom… It can be quite difficult to use technology in my role, but it’s helping the kids see that it’s a good thing to use and how we can actually integrate that and make our lives better for it.”

Over the course of the workshops, Olivia had some of her prior beliefs challenged. She changed the structure of her concept map as well as moving from a physical to a digital format, which she felt was easier to update and understand. Reflecting on the workshops, she shared that the workshop facilitators challenged her thinking because they “actually asked where we were at, they didn’t just deliver a fixed message.” In the workshop focused on Wicked Problems, Chris Clay challenged the assumption that school’s primary purpose was to prepare students for a job. After giving a very brief history of education from the age of
hunter-gatherers to the Industrial Revolution, Clay shared research on automation and AI and their predicted effect on future jobs. His statement about the possibility of mass technological unemployment resonated with Olivia. “My concept map started quite narrow. I started with a Future Ready student and originally had 3 spinoffs (concepts). The workshops opened up some new ideas, in particular the idea that school’s purpose isn’t just to help students get a job,” Olivia reflected.

Dr Emma Woodward’s workshop on wellbeing also resonated with Olivia. When considering her own context, Olivia felt that her department focused too heavily on assessment at the expense of student wellbeing. After the workshops ended, she encouraged her department to cull back on unnecessary assessment and focus on the essence of what they are actually trying to do. “It’s not about just teaching your subject matter, it’s actually teaching students to be a well-rounded human being rather than just a student, so that you can actually give them the resources to allow them to be adaptable to an inevitable future that is changing as we go along. It’s actually helping the kids to create their future rather than being concerned about not knowing what it looks like,” Olivia explained.

Before Olivia and I met for the post-workshop interview, she had spent time analysing her concept map and clarifying in her own mind what she had learned. When I asked her the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’, Olivia was quick to respond: “I would say a Future Ready student is confident in today, connected, actively involved, takes risks and has a sense of self so that they can be lifelong learners and resourceful adults later in life.” Olivia’s confidence in sharing her understanding (FC(P)=4) was much higher than before the workshops (IC(P)=2).

Her new understanding came about through a process of reflecting on changes to her concept map and looking for connections between workshop areas. Discussing her concept map, Olivia explained: “I’ve added to my three original concepts as we’ve gone along, and now have proposition statements like ‘A future ready student accepts the unknown, and is prepared for this through education, resilience, wellbeing and change. They will have knowledge, be ready for the workforce, technologically literate and well-rounded individuals.’ So that links up the most important parts for me. The areas are connected, and
it goes from preparation to education to technology. Education is the centre-point for all of my branches, the connection between them.”

Olivia felt very confident (FC(SUW)=5) that the workshop group had come to a shared understanding of Future Ready: “I would say, reading through all of them [proposition statements], we’re actually very similar. We’ve used keywords in different ways, but we’re definitely heading towards the same proposition statements and I feel like if you were to look at it as a workshop leader I don’t think you would have a struggle summarising those altogether.” Olivia’s participation in the workshop has caused her to consider undertaking a Postgraduate Certificate in Education to further develop her understanding.
Workshop participant 7: Eduardo

Figure 29. Eduardo’s pre-workshop concept map.

Figure 30. Eduardo’s post-workshop concept map
Name: Eduardo Years teaching: 5-9
Department: Mathematics Years at Kristin: 1-4

I sat in the Mathematics department office, scanning the rows of curriculum documents and textbooks as Eduardo considered my first question: ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’ When Eduardo responded by talking about the effect that exponential change will have on humans who have only ever dealt with predictable linear change, I was concerned that he may already have a deeper understanding of what it means to be Future Ready than we would discuss in the workshops. When I saw his initial concept map, my concern intensified. Eduardo’s concept map showed he had a well-developed, research-based understanding of future readiness in education. His initial concept map addressed issues such as an uncertain, unknown and exponentially changing future; the necessity of human relationships and understanding yourself; big problems and all of the interdependent aspects involved in solving them; and the necessity of being open-minded and accepting new ideas. As Eduardo participated in each workshop, I watched with interest to see whether his ideas (and subsequently his concept map) would change, or whether his prior knowledge would simply be reinforced by the different facilitators.

While Eduardo’s response to the first workshop question showed a depth of knowledge and understanding, it also showed undertones of apprehension towards exponential change, the unknown, and the problems likely to face humanity. “I would probably start to say that the world we’re in now keeps changing all the time and our brain is not ready for the speed at which things are changing. Technology and the world is changing exponentially. When people were back in the savannah, there was almost no change, just linear change for generation on generation, suddenly the change is crazy. So Future Ready is hard. I will say it’s hard, but we need to first admit that it’s hard and admit that it’s happening. So Future Ready means trying to be ready for the unexpected. And it’s not just some skills that we need now, but we need to try to look at the skills which… it’s hard because… the more general skills which will help you get the skills you need at the time.”

Eduardo’s thinking was most impacted by Ally Bull’s focus on ways to thrive in uncertain times. Eduardo explained how this workshop challenged his thinking: “At the start, I knew
the future was uncertain, so I came in wanting to know what we would do to make it less uncertain, but throughout the workshops I changed my perspective to working out how to cope, to thrive in it rather than make it less uncertain.” As well as its professional impact the workshop also affected Eduardo personally. Eduardo shared that his level of anxiety towards the future has reduced, due to “knowing I can’t know everything, and seeing things differently. In situations that appear negative I’ve been asking, ‘are there are any advantages of…?’”

At first glance, Eduardo’s initial concept map looked quite similar to the final concept map. Upon closer inspection, there were many small but significant changes. Reflecting on his concept map, Eduardo shared that “what changed was my connections between the ideas. The main things were there, but not the connection between ideas. Some changes in words seem small but are actually important, like ‘prepare for the future’ changing to ‘create the future’, or ‘wicked problems’ changing to ‘adaptive problems’. My initial concept map had ‘big problems’, which became ‘wicked problems’ after the second session, then ‘adaptive problems’ after the third, then ‘complex problems’ after reading one of the books recommended at Ally’s workshop. They all mean similar things - problems where there is no step-by-step way to solve them, but ‘complex problems’ best fit my understanding of the nature of the problems, because by nature simple and complicated problems have a recipe to solve them, whereas complex problems have no recipe to follow.”

When we met for our post-workshop interview, Eduardo was upbeat in spite of our 7.45am interview. When I repeated the first question from our pre-workshop interview, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’, Eduardo answered with a self-assured confidence I had not seen before. “I would say the world is changing fast. We don’t know exactly how it’s going to look in 5, 10, 20 years. We want our students to be ready in a sense that they’re not scared, that they’re confident they can deal with however the world is going to look.” Eduardo said that he would feel ‘extremely confident’ in sharing this understanding with a parent (FC(P)=5), as opposed to IC(P)=4 before the workshops.

Eduardo summed up the shift in thinking that he had experienced: “We came wanting to know how to be ready for the future. But we left knowing it’s ok not to know.”
Workshop participant 8: Elizabeth

Figure 31. Elizabeth’s pre-workshop concept map.

Figure 32. Elizabeth’s post-workshop concept map.
Dressed in her white lab coat, Elizabeth quickly finished putting away the apparatus used in an experiment with her previous class before joining me for the pre-workshop interview. When answering the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’, Elizabeth responded: “Kristin has various threads in terms of what Future Ready means for them, from a digital perspective, all the way through to the curriculum... I think they are wanting to provide a curriculum, and pedagogically have approaches that will enable our children to be Future Ready, and then right the way down to things that we do in the curriculum like innovative teaching.”

As Elizabeth participated in each workshop, she identified links between workshop sessions and began to synthesise the new ideas presented. Rather than adding new primary concepts to her concept map, Elizabeth linked her new understanding from each workshop into her existing knowledge structure. Only one new primary concept was added to her concept map over the course of the workshops. This addition was the concept of a ‘wicked problem’, which was added after Chris Clay’s workshop. Reflecting on this new branch of her concept map, Elizabeth explained, “For me you can see a whole load of highlights here and additional branches. It was very interesting, with Chris Clay’s presentation, that he spoke about the wicked problems and the wicked opportunities and that the problems we are going to face in the future are probably going to be huge, and non-solvable possibly. And in order to come to some kind of solution we would need to have an appreciation of multiple perspectives and just being able to collaborate and things like that on these problems. That was really important for me. Then Ally [Bull] fed into that as well, by essentially saying its possibly more about the questions that we ask and how we ask those questions, to be able to then come up with solutions that didn’t fit the conventional box before. So that was all very interesting for me – multiple perspectives, wicked problems, wicked opportunities, and the collaboration and asking curious questions.”

The concept of wicked problems resonated with Elizabeth. One of her proposition statements was: ‘A future ready student sees future ready as a wicked problem and a wicked opportunity
which requires collaboration, multiple perspectives and asking curious questions.’ Elizabeth was also challenged by the idea that our actions and the actions of those around us will ultimately create the future world in which we will live. She explained how this idea brought clarity to her thinking: “I was definitely coming at it [Future Ready] from an angle of, we can’t predict what the future is going to be, but now I am totally of the mind that we can prepare our kids for the future because actually we create the future. So, what we do now is essentially going to be the future. So, from that, that then opened up a whole number of possibilities, whereas before it was more limited in terms of, ‘we’re just taking a stab in the dark here’, now it’s kind of like ‘no, there’s clarity to the situation’, because actually what we do can define it.”

When Elizabeth and I met for the post-workshop interview, I again asked her the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’ Elizabeth’s response summarised many of the key messages from the workshop and contextualised these within a science framework: “Future Ready for Kristin means that we are going to create our future. We’re going to create our future through a number of different strands. One is wellbeing, and we incorporate mindfulness into that but also a lot of other wider issues. We make sure that the children are connected to people and nature. Future Ready from an academic perspective means that we are a collaborative school, through our IB programme but also through the NCEA, where we also look at problem solving in terms of large issues. There are issues in the MYP and the IB diploma we deal with, which reflect on the impact of science […] It’s kind of a philosophical point of view too. So, it’s not just the hard-core learning material, it definitely is a reflective, introspective procedure.”

Elizabeth felt confident that the workshop group had come to a shared understanding of Future Ready (FC (SUW)=5). However, she felt that this was in part due to the content of the workshops being pre-selected by the researcher. In this sense, she felt that the workshop group were seeing Future Ready through the lens of the researcher, which concerned Elizabeth as it was probable that many important aspects of being Future Ready were not addressed. While she agreed that the group had come to a shared understanding of what it means to be Future Ready, she felt that this understanding wasn’t a comprehensive, all-encompassing, universally-applicable understanding.
Workshop participant 9: Charlotte

Figure 33. Charlotte’s pre-workshop concept map.

Figure 34. Charlotte’s post-workshop concept map.
When the pre-interview with Charlotte began, her confident manner made it clear that this was not her first time thinking about future readiness in education. Charlotte was part way through The Mind Lab by Unitec’s Postgraduate Certificate in Applied Practice (Digital & Collaborative learning). Her knowledge from this course was evident in her response to the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’

Charlotte responded, “We don’t know what the future holds, you know, 20 years down the line. So, it’s about how can we get kids ready so that they can be comfortable in any future environment. We would talk about the fact that you want children in the future to be independent and be able to face whatever situation they come up against, to have skills… like having people skills, having problem-solving skills, having perseverance. It’s basic values and its skills, not looking at specific contexts, but across all levels.”

Responding to the second question, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?’”, she was quick to point out the misconceptions around the role of an art teacher, and what the primary focus actually is:

“You know, people think you’re just mucking around with paint and stuff... But you’re actually problem solving all the time. It’s about the way we deal with conflict, the way we deal with problems that come up and the way that we also deal with success and celebrating those things, and how we involve other people, how we care for each other. All those sorts of things, it’s that every day, living on our planet, in our planet, with our people.”

Charlotte explained that the workshops where genuine connection between participants occurred were the ones she found most meaningful. “There’s so much out there about making connections, and how we’re communicating more in a digital world, but the level of connection is less. So, the biggest thing that came out of the workshops was connection, and the strength of the workshops was actually that we connected - particularly in Ally’s session. People were vulnerable and open and so genuine connection occurred. The timing of the workshops was really good. From starting with Andrew [Churches] to light the fire, then
Chris [Clay] who scared us all by talking about wicked problems, and then Ally [Bull] who brought it back to us connecting as humans, not as computers who have one emotionless role, but as people. That was reiterated by Emma [Woodward]’s session, the need for human connection.”

This understanding of the importance of human connection inspired Charlotte to reflect on her own practice and make some changes within her classroom based on these reflections. Charlotte explained, “I’m doing something brand new in my classroom with student agency this year. Relationship and authentic connections are what’s so important. It’s taken me back to seeing each learner as an individual and knowing and treating them as such.”

When I met Charlotte for her post-interview, I was unsure whether her responses would be different to the pre-interview, as she’d recorded the greatest confidence in her pre-workshop understanding out of the entire workshop group. Responding to the first question, ‘A prospective parent notices the Future Ready tagline on display, so they ask you, “What does it mean to be Future Ready?”’, Charlotte shared:

“Well at the end of the day, you have to actually put that back on the parent and say, “What do you think the future for your child is going to look like?” because one thing I’ve learnt from Mindlab and your course is we don’t know. We are creating the future. So, what can we, in this school and in this environment, do to make sure the child has certain skills and certain attitudes towards coping and thriving in a future that’s uncertain – not that you want to scare the parent of course – but you actually want to have that open dialogue with parents and say, “How do you think the future is going to look for your child?” Think back to what it was like for you and for your parents and think about how much different that is going to be for your child.”

Similarly, Charlotte answered the second question, ‘What would you say if a colleague asked you, “How do you prepare students to be Future Ready?”’ by explaining she would start by questioning the colleague about their own understanding of the role of a teacher. She responded, “I would actually have a conversation with them about their programme, and what they feel their role as a teacher is. Because it’s not about me coming to tell them what I think it should be, they need to unpack it for themselves. I would talk about things that I’ve changed in my classroom around giving children choice, giving them the chance to problem
solve, take ownership of their learning and their journey. I would very happily model and after that, we need to unpack it for that person, so that they themselves have ownership.”

Noting the differences in her pre-workshop and post-workshop interview responses, I met with Charlotte and asked, “In the pre-interviews you answered the questions by confidently sharing your own understanding of Future Ready. In the post-interviews you explained that you would respond by first finding out the parent/colleagues understanding. What caused this change in thinking?”

Charlotte replied, “The learning we did both with you and in my Mindlab course was about – it’s not about you coming in and telling people. I also did a leadership paper, which taught me that a leader is not the person up the front waving the flag, but it’s the person who gets alongside and understands the thinking and feeling and wanting and wishing of those they’re leading. If there’s a continuum, and I’m at one end of it, there’s no point in me talking about stuff at that end of it to someone who is at the other end. It’s about finding where they are and then guiding them along to their next step. We can’t just come in and tell parents what 21st century learning is. They need to go and do their own research in their own areas and build their own understanding. They need to get the point and find out for themselves. That’s where I was heading with that. Everyone needs to find out what Future Ready is for themselves and build their own understanding of that. It has to be a community thing. You can’t always say, “step in my footsteps.” Sometimes people need to find their own places to step.”
Discussion of vignettes

The nine vignettes reveal the range of views held by the workshop participants. According to Day (1993), multiple factors, such as individuals’ psychological, social and employment histories, together shape their beliefs and behaviours. Viewing each participant as an individual highlighted the way that these factors affected the way participants interacted with the workshop content and the workshop group. As the concept maps show, none of the participants entered the workshop group with the same knowledge structure. While many participants added similar concepts to their concept maps throughout the workshops, they were integrated into prior knowledge structures in different ways and therefore had differing levels of impact on the individual thinking of participants. Whilst the vignettes highlighted the impact of the workshops on each individual, the following sections explore the impact upon the workshop group.

4.2 Pre-workshop interviews

The pre-workshop group interviews were carried out prior to the first workshop (see Appendix A for interview questions). A thematic analysis of the pre-workshop interviews was carried out to determine the amount and content of participants’ understanding of FR. As the development of an understanding of FR was an iterative process with no predetermined definition that was meant to be reached, responses were not graded against a list of correct responses. Rather than looking for the ‘right’ definition of FR, an open coding process was used on the pre-interview transcripts to determine the level of similarity of responses within the workshop group. Aside from the responses given to interview questions, confidence of workshop participants in sharing their understanding of FR was also considered.
Themes that emerged

Table 7

Key Themes from the Pre-Workshop Interviews

<table>
<thead>
<tr>
<th>Theme</th>
<th>Number of participants (/9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital technology</td>
<td>8</td>
</tr>
<tr>
<td>21st century skills</td>
<td>6</td>
</tr>
<tr>
<td>Preparation for a changing world</td>
<td>4</td>
</tr>
<tr>
<td>Uncertainty regarding FR</td>
<td>4</td>
</tr>
<tr>
<td>Anxiety about the future</td>
<td>3</td>
</tr>
</tbody>
</table>

Almost all of the workshop participants shared about the way that Kristin ensures students are FR by providing them with access to the latest types of digital technology. Participants shared about their use of digital technology in the classroom, ways that digital technology connects students to the world, and the school programmes offered that relate to digital technology. Most participants also spoke about FR meaning that students leave school with 21st century skills such as creativity, problem-solving skills and adaptability. While this theme encompasses many different skills referred to by participants, the common theme that emerged was that students need the opportunity to develop particular skills as part of their schooling. Preparation for a changing world was referred to by just under half (4/9) of the participants, who shared about the importance of recognising that the world will not be the same when our current students graduate. This theme was underpinned by a sense of fear towards the future for 3/9 participants, who spoke of change in a negative way, one that reflected a pessimistic view of the future.

Surprisingly, in response to the first question, 4/9 participants gave a proviso before replying. One participant said that she had only been at Kristin for one year, so was not sure what FR meant; another said she had her own opinion but did not know if it was correct; and two said that they were unsure and that this was why they joined the workshop group. While all of these participants went on to share their own understanding, it was interesting to note that they felt the need to qualify their response before sharing it.
Aside from the themes that were spoken about by multiple participants, many shared an individual understanding which was not shared by any other participants in the workshop group. For example, individuals spoke about the IB curriculum, assessment, values, the changing role of knowledge, student wellbeing, the future of jobs and Kristin’s first-mover status, as aspects of being FR. Large differences existed between the participants concerning the ‘richness’ of their descriptions of FR. As highlighted in the vignettes, some teachers showed a surface-level understanding, while others showed a greater depth of understanding.

The pre-workshop interviews showed that some degree of collective understanding already existed within the workshop group. The themes of digital technology and 21st century skills were spoken about by over half of the workshop participants. The level of consistency between the other themes that emerged was very low.

Table 8

Pre-Workshop Confidence

<table>
<thead>
<tr>
<th>Name</th>
<th>IC(P)</th>
<th>IC(C)</th>
<th>IC(SUS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Louise</td>
<td>2.5</td>
<td>4.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>3.5</td>
<td>4.5</td>
<td>4</td>
</tr>
<tr>
<td>Eduardo</td>
<td>4</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Michelle</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Emma</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Olivia</td>
<td>2</td>
<td>2.5</td>
<td>3</td>
</tr>
<tr>
<td>Frances</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Charlotte</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Kent</td>
<td>3.5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Sum</strong>:</td>
<td><strong>29.5</strong></td>
<td><strong>36</strong></td>
<td><strong>27.5</strong></td>
</tr>
<tr>
<td><strong>Mean</strong>:</td>
<td><strong>3.3</strong></td>
<td><strong>4</strong></td>
<td><strong>3.1</strong></td>
</tr>
<tr>
<td><strong>Median</strong>:</td>
<td><strong>3.5</strong></td>
<td><strong>4</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Range</strong>:</td>
<td><strong>3</strong></td>
<td><strong>2.5</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Mode</strong>:</td>
<td><strong>3.5, 4, 2 (2x)</strong></td>
<td><strong>4.5, 5, 4 (2x)</strong></td>
<td><strong>4 (4x)</strong></td>
</tr>
</tbody>
</table>

**Key:**
- IC(P): Initial Confidence sharing with parents
- IC(C): Initial Confidence sharing with colleague
- IC(SUS): Initial Confidence that staff have a shared understanding

Pre-workshop confidence
A confidence scale was used to determine the level of confidence participants had when sharing their understanding of FR with others. The data collected from the confidence scale showed that almost all workshop participants (7/9) reported greater levels of confidence about sharing their understanding of how they make students FR with a colleague, as opposed to sharing what FR means with a parent. Liu and Jackson (2009) note that people’s confidence levels vary in different contexts. Participants may have felt that sharing about personal practice with a colleague in the same department is less daunting than sharing their understanding with a parent brand new to Kristin, due to their greater levels of familiarity with colleagues than with unknown parents.

A range of 3 was recorded for IC(P), which was the highest range of the three data sets collected. While Olivia and Emma both reported a low level (2) of IC(P), Eduardo recorded the maximum level (5) of IC(P). While future-readiness was a prior interest of his, Olivia and Emma both chose to participate in the workshop groups as they felt like they were unsure of the FR taglines meaning and application. These differing levels of confidence have been explored within the respective vignettes of each participant. The lowest overall confidence was for IC(SUS), which had a mean score of 3.1. This score is in the middle of the 1-5 range of possible responses, and showed that on average, participants were neither confident nor unconfident that the staff at Kristin would share a similar understanding of FR as themselves.

4.3 Post-workshop interviews

To ensure that the post-workshop interviews were read with an open mind, the initial codes that were applied in the pre-workshop interviews were not re-used for the post-workshop interviews. Instead, a new process of open coding occurred, with new themes emerging. Key themes that emerged are shown in Table 9 below.
Table 9

*Key Themes from the Post-Workshop Interviews*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Number of participants (/9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21st century skills</td>
<td>8</td>
</tr>
<tr>
<td>Student wellbeing</td>
<td>7</td>
</tr>
<tr>
<td>Creating the future</td>
<td>5</td>
</tr>
<tr>
<td>Uncertain future</td>
<td>5</td>
</tr>
<tr>
<td>Digital technology</td>
<td>4</td>
</tr>
<tr>
<td>Academic knowledge</td>
<td>3</td>
</tr>
<tr>
<td>Multiple perspectives</td>
<td>2</td>
</tr>
<tr>
<td>Real-world application of learning</td>
<td>2</td>
</tr>
</tbody>
</table>

The key differences between the pre-workshop and post-workshop interview themes were the reduced references to digital technology (from 8 down to 4), the increased references to 21st century skills (from 6 up to 8), and the disappearance of references to anxiety about the future (3 to 0). While 5/9 participants spoke about an uncertain future, an optimistic outlook was shared regarding this uncertainty. Rather than seeing uncertainty as something negative, participants spoke about how uncertainty gives students an opportunity to create the future world they want to live in. Creating the future was referred to by 5/9 participants. While many of the other key themes are closely aligned with the workshop content, this theme was only spoken briefly about in Clay’s workshop. However, it strongly resonated with the workshop group, and set about a mindset shift for many participants. The pre-workshop understanding articulated by 4/9 participants was that FR refers to how the school can prepare students for an unknown future. In contrast to this, 5/9 participants explained that FR refers to the way the school can develop students who can create the future world they want to live in.
Student wellbeing was another theme that strongly resonated with the workshop group. Just one participant spoke about it in the pre-workshop interview, whilst 7/9 participants spoke about it in depth in their post-workshop interview. Rather than being something new to participants, it was the highlighting of the effects of a digital world on student wellbeing that brought this issue to the forefront of many participants’ minds. Five minor themes also emerged in the post-workshop interviews. Three were shared between a small number (2 or 3) of participants (academic knowledge, multiple perspectives and real-world application of learning). In addition to this, two other areas were spoken about by individual participants. These were the IB curriculum, and the development of well-rounded students.

The difference between the themes that emerged in the pre-workshop interviews compared to the post-workshop interviews was pronounced. Other than 21st century skills, all themes in the pre-workshop interview either experienced a significant decrease in the number of times they were referred to or disappeared completely from the post-workshop interview list of themes. This reflects the significant changes in thinking that occurred for workshop participants over the course of the workshop series.

Four of the themes that emerged were referred to by over 50% of the workshop group. These themes were 21st century skills (8/9), student wellbeing (7/9), creating the future (5/9) and uncertain future (5/9). This shows a greater level of collective understanding developed over the course of the workshop series, alongside a greater level of optimism towards the future.
Post-workshop confidence

The data from the post-workshop interviews are tabulated with the data from the pre-workshop interviews to simplify comparisons. The data clearly show that the workshop group’s confidence in sharing their understanding of FR with a parent has increased. This is shown in all measures of data, most tellingly the increase in mean (IC(P)= 3.3, FC(P)= 4.3) and median (IC(P)= 3.5, FC(P)= 4). The reduction in the range from IC(P)=3 to FC(P)=1 highlights the high levels of confidence reported by all participants, as compared to the wide range reported in the pre-workshop interviews. The mode also showed similarities between confidence levels in the workshop group, with over half of the group (5/9) reporting FC(P)=4.

The data also highlights the increased level of confidence participants reported when sharing ways they prepare their students to be FR with a colleague. While reported levels of confidence were already high (IC(C) mean=4) in the pre-workshop interviews, a further increase in confidence was reported (FC(C) mean = 4.6) in the post-workshop interviews. The median also
increased (IC(C)=4, FC(C)= 4.5). Similar to the confidence when sharing with a parent, a reduction in the range also occurred, from IC(C)=2.5 to FC(C)=1. The mode was the highest level of confidence (5), and this was shared by 4/9 participants.

In the post-workshop interviews, most participants reported an increased level of confidence (7/9) or the same level of confidence (1/9) in sharing their understanding of FR with a parent. Most participants also reported an increased level of confidence (6/9) or the same level of confidence (2/9) when sharing ways they prepare students to be FR with a colleague.

Unlike the other workshop participants, Charlotte’s confidence decreased in both areas (IC(P)=5, FC(P)=4.5 and IC(C)=5, FC(C)=4.5). To understand the reasons why her confidence had decreased, I met with Charlotte, who said that the more she learned, the more she felt there still is to learn which means extreme confidence is not possible. She explained that, “We can’t be 100% confident in our understanding because we don’t know what the future is. We only know what we want it to be. I’m confident in what I understand, but that doesn’t make it right. It’s just my understanding.”

In Q3 (Shared understanding between staff), participants were asked to consider how confident they were that if another staff member was asked Q1 and Q2, they would share a similar message. The mean IC(SUS) was 3.1, compared to the FC(SUS) which was 2.2. The median IC(SUS) was 3, which dropped to 2 for the FC(SUS). The range rose from IC(SUS)=3, to FC(SUS)=2.5. While the IC(SUS) mode was 4 (4/9 participants), the FC(SUS) mode dropped to 2 and was shared by 6/9 participants. Frances’ FC(SUS) was 2. She justified her selection, saying “I suspect it’s sitting down here, around a 2. Not for any lack of knowledge, just a lack of sharing. It’s not to say that people who haven’t done the workshops don’t have knowledge to contribute, but I think it’s that combination of additional content from the speakers and then the discussion and sharing around it takes us up that scale.”

In the post-workshop interview, one additional question was introduced. This question (3A) was very similar to question 3. The only change was the group it referred to. Rather than referring to the whole staff, participants were asked to consider how confident they were that if another staff member from the workshop group was asked Q1 and Q2, they would share a similar message. This question was added to attempt to quantify the degree to which the workshop group felt they had reached a collective understanding. This data can be compared to the FC(SUS) data, as both refer to the level of shared understanding between different groups.
All nine of the participants had greater confidence that the workshop group would give a similar message than another staff member outside of the workshop group. The FC(SUS) mean=2.2, while the FC(SUW) mean=4.3. The FC(SUS) median=2, while the FC(SUW) median=4.3. Finally, the FC(SUS) mode=2 (6/9 participants), while the FC(SUW)=5(4 participants). In Olivia’s post-workshop interview, she justified why her FC(SUW) was 5. “Going through the summaries that we discussed and put together on a google doc last night, in our last workshop series, I would say reading through all of them, having taken that time to do that today, we’re actually very similar. We’ve used keywords in different ways, but we’re definitely heading towards the same propositions and I feel like if you were to look at it as a workshop leader I don’t think you would have a struggle summarising those altogether. So, I’d feel very confident, a 5.”

4.4 Collective understanding process

This section focuses specifically on the first part (italicised) of research question 1, *To what extent does participation in a cross-faculty network of staff result in a collective understanding of a complex pedagogical concept*, and how effective is a workshop approach in supporting this?

Collective understanding from concept maps:

Barron (2000) argues that individuals need the chance to articulate their own personal understanding, if a collective understanding is to be developed. To examine the individual perspectives of the workshop group, data was collected and used to determine the extent to which a collective understanding had been developed. The data collection process is explained in the instructions below, which were shared with participants.
Instructions:

Note: This activity is to be completed without discussion

- Reflect on your concept map, considering the things a student leaving Kristin needs to be Future Ready.
- Look for proposition statements, which are formed by your concepts and the linking words between them. The minimum length for a proposition statement is two concepts and their link, and there is no maximum length.
- Make a list of these proposition statements.
- Rank your proposition statements, then type your top three (the three most important things for a student to be ‘Future Ready’) into the attached Google Document.

The results are shown in the table below.

Table 11

Proposition Statements

1. Primary Proposition Statements (Those you consider, as individuals, the most important for a student to be ‘Future Ready’)

   - To be FR requires cognitive competencies, interpersonal competencies and intrapersonal competencies. (Emma)
   - A FR student is open to experiment with multiple perspectives and can ask a variety of creative questions when working on complex problems. (Eduardo)
   - In an ever changing world, FR students will develop and utilise a toolkit of mindful practices which builds resilience, wellbeing and positive mindsets, to help ensure that they flourish now and a tonu wa (in the future). (Louise)
   - FR students have a dynamic skill set, thinking outside the lines, researching the future environment for what we will need. (Frances)
   - A FR student needs to care and develop the skills needed to be an active world citizen. (Michelle)
   - A FR student today is confident, connected, actively involved, takes risks, has a sense of self, so that they can be lifelong learners and resourceful adults later in life. (Olivia)
- A FR student sees FR as a wicked problem and a wicked opportunity which requires collaboration, multiple perspectives and asking curious questions. (Elizabeth)
- FR students are aware of issues in our world and are confident to take action or make changes - small or big. (Charlotte)
- A FR student will be: Literate, a Critical and Creative Thinker, a Responsible and Resilient World-Class Citizen, who strives for Excellence. (Kent)

2. Secondary Proposition Statements (Those you consider, as individuals, the second most important for a student to be ‘Future Ready’)

- FR is creating, rather than preparing for, the ‘future’ which is being shaped by wicked problems. (Emma)
- A FR student transforms uncertainty into opportunity. (Eduardo)
- FR students have the power to create change for good - uplifting NZ and the world. (Frances)
- A FR student needs to develop well-being through emotional self-management and true connection to others. (Michelle)
- A FR student accepts and understands the future is unwritten, and therefore unknown, and is ready to create their own future. (Olivia)
- A FR student is able to study through assimilating information, ordering thoughts and ignoring distractions. These can be aided via digital means/awareness. (Elizabeth)
- To be FR it is essential that students are creative, intuitive individuals who understand that time is fleeting, appreciate diversity, thrive on challenges and are well versed in relevant technology. (Louise)
- FR students harness emotional intelligence when connecting with others. (Charlotte)
- Key skills for a FR student to have are: adaptability, teachability, critical thinking, creative, leadership, problem solving, and resilient. (Kent)

3. Tertiary Proposition Statements (Those you consider, as individuals, the third most important for a student to be ‘Future Ready’)

- FR requires considering the world through different perspectives. (Emma)
● A FR student is prepared for the future through education where they develop resilience and a strong well-being, learn to use technology well, and appropriately, and have a willingness to be adaptable. (Olivia)

● A FR student is a resilient and thriving individual who understands the meaning of being human. (Eduardo)

● A FR student needs to bring an individual perspective to challenges and be able to question to open up possibilities. (Michelle)

● A FR student is resilient fully utilising their 24 strengths with a focus on wellbeing, mindfulness and meaningful authentic real (not digital) relationships. (Frances)

● FR students question the status quo. (Charlotte)

● A FR student acknowledges their well being which requires them to be connected to nature and people. (Elizabeth)

● A FR student will develop the skill set to enable them to make Global Connections that focus on empathy, through an appreciation of diversity, utilising student agency and curious questions. (Louise)

● FR students are ready for the Future of Work, knowing that jobs in the future will encounter lots of change. (Kent)

The same open coding process that was applied to the interviews was also applied to the proposition statements. Prior codes from the interview process were discarded, and new codes were identified after reading through the proposition statements multiple times. Six key themes were identified. Some of the themes related to one area, while others related to a mindset. For example, the theme of creating the future/seeing the future as full of opportunities is showing a positive mindset that views the future with a hopeful lens, while the theme of wellbeing relates to any responses that referred to things which focused on positive student wellbeing. The six key themes identified relate to 21st century skills, wellbeing, perspective-taking/questioning, complexity/uncertainty/wicked problems, creating the future/seeing the future as full of opportunities and technology.

The proposition statements were then grouped and colour-coded according to the themes that emerged.
### Table 12

*Proposition Statements arranged by Theme*

<table>
<thead>
<tr>
<th>Key:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relating to 21st century skills</td>
</tr>
<tr>
<td>Relating to wellbeing</td>
</tr>
<tr>
<td>Relating to creating the future/seeing the future as full of</td>
</tr>
<tr>
<td>opportunities</td>
</tr>
<tr>
<td>Relating to perspective-taking/questioning</td>
</tr>
<tr>
<td>Relating to complexity/uncertainty/wicked problems</td>
</tr>
<tr>
<td>Relating to technology</td>
</tr>
</tbody>
</table>

#### Proposition statements relating primarily to 21st century skills

- To be FR requires cognitive competencies, interpersonal competencies and intrapersonal competencies. (Emma)
- FR students have a dynamic skill set, thinking outside the lines, researching the future environment for what we will need. (Frances)
- A FR student will be: Literate, a Critical and Creative Thinker, a Responsible and Resilient World-Class Citizen, who strives for Excellence. (Kent)
- Key skills for a FR student to have are: adaptability, teachability, critical thinking, creative, leadership, problem solving, and resilient. (Kent)
- A FR student needs to care and develop the skills needed to be an active world citizen. (Michelle)
- A FR student today is confident, connected, actively involved, takes risks, has a sense of self, so that they can be lifelong learners and resourceful adults later in life. (Olivia)
- A FR student will develop the skill set to enable them to make Global Connections that focus on empathy, through an appreciation of diversity, utilising student agency and curious questions. (Louise)

#### Proposition statements relating primarily to wellbeing

- A FR student needs to develop well-being through emotional self-management and true connection to others. (Michelle)
• A FR student is a resilient and thriving individual who understands the meaning of being human. (Eduardo)
• A FR student is resilient fully utilising their 24 strengths with a focus on wellbeing, mindfulness and meaningful authentic real (not digital) relationships. (Frances)
• A FR student acknowledges their wellbeing which requires them to be connected to nature and people. (Elizabeth)
• FR students harness emotional intelligence when connecting with others. (Charlotte)
• In an ever-changing world, FR students will develop and utilise a toolkit of mindful practices which builds resilience, wellbeing and positive mindsets, to help ensure that they flourish now and in the future. (Louise)

Proposition statements relating to creating the future/seeing the future as full of opportunities in times of complexity/uncertainty/wicked problems

• FR students have the power to create change for good - uplifting NZ and the world. (Frances)
• A FR student accepts and understands the future is unwritten, and therefore unknown, and is ready to create their own future. (Olivia)
• FR students are aware of issues in our world and are confident to take action or make changes - small or big. (Charlotte)
• FR is creating, rather than preparing for, the ‘future’ which is being shaped by wicked problems. (Emma)
• A FR student transforms uncertainty into opportunity. (Eduardo)
• FR students are ready for the Future of Work, knowing that jobs in the future will encounter lots of change. (Kent)

Proposition statements relating primarily to perspective-taking/questioning

• A FR student needs to bring an individual perspective to challenges and be able to question to open up possibilities. (Michelle)
• FR requires considering the world through different perspectives. (Emma)
• FR students question the status quo. (Charlotte)
A FR student is open to **experiment with multiple perspectives and can ask a variety of creative questions** when working on **complex problems**. (Eduardo)

A FR student sees FR as a **wicked problem** and a **wicked opportunity** which requires **collaboration, multiple perspectives** and **asking curious questions**. (Elizabeth)

**Proposition statements relating to the use of digital technology**

- To be FR it is essential that students are **creative, intuitive individuals** who understand that time is fleeting, **appreciate diversity, thrive on challenges** and are well versed in **relevant technology**. (Louise)
- A FR student is prepared for the future through education where they develop **resilience** and a **strong well-being**, learn to **use technology well**, and appropriately, and have a willingness to be **adaptable**. (Olivia)
- A FR student is able to study through **assimilating information, ordering thoughts and ignoring distractions**. These can be aided via **digital means/awareness**. (Elizabeth)

Note: Resilient/resilience appears in many proposition statements, and can fit into more than one theme. It appeared as one of the wider 21st century skills, but also as a trait that can enhance wellbeing. It is thus highlighted blue/yellow depending on the context of the proposition statement it is used within.

### 4.4.1 Themes that emerged

Proposition statements were sorted according to their primary focus area. The only exception to this was for statements referring to complexity/uncertainty/wicked problems, as each use of these terms was accompanied with a reference to other key themes. In addition, the number of participants referring to a particular area was the unit counted, not the total number of proposition statements within that theme. For example, Kent had two proposition statements referring predominantly to 21st century skills, however he was only counted once in the table below.

Table 13

*Key Themes from the Proposition Statements*
<table>
<thead>
<tr>
<th>Theme</th>
<th>Number of participants (/9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21st century skills</td>
<td>6</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>6</td>
</tr>
<tr>
<td>Creating the future/thriving/seeing the future as full of opportunities</td>
<td>6</td>
</tr>
<tr>
<td>Perspective-taking/questioning</td>
<td>5</td>
</tr>
<tr>
<td>Complexity/uncertainty/wicked problems</td>
<td>3</td>
</tr>
<tr>
<td>Digital technology</td>
<td>3</td>
</tr>
</tbody>
</table>

The key themes that emerged from the proposition statements were closely linked to the workshop content. As participants had spent a prolonged period of time learning together, it was not surprising that the proposition statements showed significant similarities. What was surprising was the lack of reference to the prior knowledge that participants had entered the workshops with. Only two of the six key themes that emerged from analysis of the proposition statements were the same as those that emerged from the pre-workshop interviews (digital technology and 21st century skills).

The high number of participants who referred to creating the future/thriving/seeing the future as full of opportunities (6/9) again highlighted the shift in mindset that occurred for a number of participants. In the pre-workshop interviews, four participants expressed fear about what the future holds. At the end of the workshop series, participants shared a more hopeful view, through assertions such as Olivia’s statement that “A Future Ready student accepts and understands the future is unwritten, and therefore unknown, and is ready to create their own future.” This mindset shift was further articulated by Emma’s proposition statement, “Future ready is creating, rather than preparing for, the ‘future’”. This shift came about as the result of participation in the workshops but was not a key content area and therefore stood out from the key themes that emerged. In accordance with the themes that emerged from the post-workshop interviews, complexity/uncertainty/wicked problems were all viewed optimistically within the context of another theme. One of Eduardo’s proposition statements read, “A future ready
student transforms uncertainty into opportunity.” Participants neither ignored nor played down the challenges of the future world, but instead viewed these issues with an optimistic outlook.

Many of the proposition statements made reference to multiple themes, such as Louise’s statement that “A “Future Ready” student will develop the skill set to enable them to make Global Connections that focus on empathy, through an appreciation of diversity, utilising student agency and curious questions.” Proposition statements relating to multiple themes show the interconnected nature of the themes that emerged and highlight the need for themes to be viewed holistically rather than in isolation.

4.4.2 Comparison between post-workshop interviews and proposition statements

Table 14

Summary of Key Themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Propositions (/9)</th>
<th>Post-workshop interviews (/9)</th>
<th>Total (/9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21st century skills</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Creating the future/thriving/seeing the future as full of opportunities</td>
<td>6</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Perspective-taking/questioning</td>
<td>5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Complexity/uncertainty/wicked problems</td>
<td>3</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Digital technology</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

This table shows the six key themes that emerged from the proposition statements and the post-workshop interviews. The total shows the number of participants who shared about each theme, either in the proposition statements, post-workshop interview, or both. For example, six participants shared about wellbeing in their proposition statements, and seven about wellbeing in their post-workshop interview. Five of those who shared about wellbeing in their post-
workshop interview had also shared about it in their proposition statements, and two participants had not. Therefore, these two participants are added to the total, making the total number of participants who shared about wellbeing eight.

Each of the six key themes were shared by at least half of the workshop group, showing that a collective understanding was developing. Runhaar, ten Brinke, Kuijpers, Wesselink and Mulder (2014) found a positive relationship between the levels of team learning that occurs, and the development of a shared understanding. “Moderate levels of team learning co-occurred with high levels of shared understanding […]. A low level of team learning co-occurred with a low level of shared understanding” (p 80). The high degree of team learning that took place within the workshops resulted in a high level of shared understanding.

There are a number of reasons why none of the themes were shared by all nine of the workshop group. In the proposition statements, participants could only share their top three statements, meaning some areas were left out. However, in the post-workshop interviews this was not the case, and participants were able to speak without limits about the understanding they had developed. Charlotte was the only participant who did not mention 21st century skills in her post-workshop interview or proposition statements. When I asked her about this in a follow-up conversation, she explained that 21st century skills are a given for a student to be FR, so there was no need to explicitly state this. To better understand whether the key themes that had emerged were part of an understanding shared by the whole workshop group, the themes were summarised for feedback. This process is outlined in the following section.

4.4.3 Collective Understanding

When reviewing the key themes that had emerged, it seemed clear that there was some consensus around the key elements of what it means to be Future Ready. Rather than a body of knowledge to have, a list of skills to be proficient in or attributes to exhibit, the themes that emerged referred more to a mindset that students need to develop. With input from available workshop group members, I attempted to summarise the underlying meaning of the proposition statements in a draft summary document.
This first draft was then shared with a selection of available workshop group members for their initial feedback. Although the feedback was generally positive, Eduardo suggested that the word ‘view’ is a verb that is too passive - that it suggests sitting back and watching the world rather than being actively involved. He suggested ‘sees’ as a replacement, as it still referred to FR as a mindset but is more assertive than ‘views’. Other than changing the order of some of the listed items, it was also suggested that ‘multiple perspectives’ should be included due to the importance of seeing multiple perspectives when addressing wicked problems. The final suggestion was to change ‘knowledge and skills as necessary’ to better emphasise that a FR student should understand which skills they will need to succeed, rather than viewing knowledge and skills generically. A second draft was created to reflect these suggestions:
A FUTURE READY STUDENT SEES:

- Multiple perspectives
- Wicked problems as wicked opportunities
- Complexity as something to be comfortable with
- The importance of equipping themselves with necessary skills
- Wellbeing as an underlying factor of success
- The future as unwritten
- Tech as a tool

*Figure 36. Collective understanding summary 2.*

This draft summary document and the thematic analysis of the proposition statements were shared in a follow-up meeting with workshop participants three months after the workshops’ conclusion. Unfortunately, at this point in the project two workshop participants had moved on to employment elsewhere. The remaining seven participants were unable to find a mutually convenient time for everyone to meet, so two meetings took place involving three participants at each meeting (the seventh participant was unavailable at either time and contributed her thoughts via email after the meetings). At this meeting, I started by explaining that the document was my interpretation of the understanding reached by the workshop group, and I wanted to get an honest response as to whether this was the understanding held by the individuals in the workshop group.
Eduardo shared with the group that he had been reading Berger and Johnston’s (2015) book, *Simple habits for complex times*, and that this had influenced his thinking after the workshops. He explained that while it is important to be comfortable with complexity, it is also important to be comfortable with uncertainty, so this should be reflected in the document. Michelle raised a number of points for the group to consider. She first pointed out that the group’s emphasis on wellbeing in the proposition statements was not clearly reflected in the document. Michelle felt that the phrase, “Wellbeing is an underlying factor of success”, was a statement that is universally agreed upon, and therefore did not add anything to help us understand what it means to be FR. Recalling Emma Woodward’s workshop on wellbeing, Charlotte suggested that human connection needed to be highlighted as something integral to wellbeing. Michelle spoke about human values, such as love, compassion and kindness, and the group agreed that these should be better represented.

Michelle also highlighted the fact that knowledge was not included in the list, which kickstarted a conversation about the definition of knowledge and its importance for future readiness. The conversation turned to the 21st century skills session, where knowledge and its value had been debated, as well as Ally Bull’s session on curious questions, where the creation of knowledge was shown to be a collaborative process. After discussion about current and obsolete knowledge and how the continual obsolescence of knowledge will affect students in the future, the suggestion was made that knowledge is important, but needs to be viewed as something fluid that serves a purpose, rather than as a list of information that needs to be memorised. When asked whether any of the points in the list was more important than the others, many of the group agreed that ‘seeing the future as unwritten’ was a key mindshift for them, and therefore needed greater prominence in the document. Based on this feedback, a third version of the document was created:
A FUTURE READY STUDENT SEES:

Knowledge as fluid

Wicked problems as wicked opportunities

Wellbeing, values and human connection as integral

Complexity and uncertainty as something to be comfortable with

Knowledge and skills as a means, not an end

Multiple perspectives

Tech as a tool

The future as unwritten

Figure 37. Collective understanding summary 3.

This document was sent to the workshop group once more, and the feedback received this time was overwhelmingly positive, suggesting a collective understanding had been reached, as a result.

Discussion of collective understanding

The attributes of a FR student agreed upon are wide in their scope. They are a list of broad mindsets that leave the specifics to individuals to contextualise and apply. Within a complex organisation such as a school, where students range in age from three months to 18 years, and over 200 staff carry out varied roles, collective understanding needs to be broad enough to be relevant to a wide range of contexts, but specific enough to have meaningful application within
each context. It is not possible, nor would it be effective, to give all teachers the same set of lessons to teach their students and then expect that this will result in students being FR. The workshop participants felt that it is more effective to develop a collective understanding of this complex pedagogical concept, then have staff internalise the ideas, contextualise them and apply the relevant ideas within their individual contexts.

Eduardo explained the difference between his broad understanding of FR, and the reasons why he has taken a specific focus on problem-solving with his classes.

I know that some things, like wellbeing, are very important [for students to be FR], and perhaps the most important within the school context. However, that’s not the most important thing for me as a maths teacher. It might be the most important thing for a health teacher, but not maths. However, if I don’t teach students problem solving, how will they learn to do it? In a wider view, that impacts their wellbeing if they can solve problems.

Frances explained that “we all approach it from our different perspectives - whether it’s student-centric in a class level, or for me at a broader level in terms of the brand.” The collective understanding of FR developed was broad enough for each individual to take action in some way, regardless of their individual work context. The impact of participation is considered in section 4.7.

4.5 Effectiveness of a workshop approach

This section focuses specifically on the second part (italicised) of research question 1, To what extent does participation in a cross-faculty network of staff result in a collective understanding of a complex pedagogical concept, and how effective is a workshop approach in supporting this?

Bohm (1990) found that shared understanding occurs when participants hold their own beliefs objectively and consider the perspectives of others. In the post-workshop survey, participants were asked to reflect on the effectiveness of a workshop approach in supporting the development of a collective understanding. All of the participants felt that the workshop approach was effective for a variety of reasons. Three participants felt that the workshop
approach was effective because it encouraged the sharing of different perspectives when considering issues. Michelle said that the cross-faculty nature of the group meant there was “great diversity”, which “allowed for very different viewpoints and perspectives.” Emma’s response confirmed this viewpoint, “This particular group was very effective because I believe we approached the concepts from different perspectives.”

The opportunity to hear from those working in completely different work contexts gave participants insight into areas of the school that they were previously unaware of, and this was repeatedly mentioned as one of the strengths of a cross-faculty workshop group. Emma’s response above began with “This particular group”, inferring that the workshop approach may not be the only determinant of success, but that the particular people who participated also had a part to play. Both Louise and Kent referred to group dynamics as a key factor in the workshop group’s success. Puntambekar (2006) argues that all participants need to be actively engaged in the process of developing a collective understanding. Active engagement includes participants raising new topics, asking questions, and responding to each other’s contributions. These were key components of the workshops, and each participant contributed to the workshops in this way to a varying degree.

The two-week break between most workshops provided time for participants to think about the content shared and its application within Kristin. Stahl (2005) argues that collaborative knowledge-building is not something that can occur instantaneously. Instead, it is a process that takes place over time, as individual perspectives or understandings are shared with the group and slowly refined. Further to the effective timing of the workshops, Kent explained that the use of concept mapping helped participants to develop a greater understanding of the workshop content. He concluded by recommending that the cross-faculty workshop model “would be a great model to use for future Professional Learning workshops around the school”.

Both Charlotte and Elizabeth explained that a workshop approach supported the development of a collective understanding, as they were an effective way to present and explore the content covered. Charlotte added that participation in the workshop group meant that all of the participants had shared knowledge based on the content covered, which helped ensure that some sort of collective understanding was developed. Frances felt the structure of the workshops, which included both the sharing of knowledge and time for discussion, “helped to stretch our ideas and build understanding of different perspectives.” She also felt that the small size of the
workshop group gave participants the opportunity for discussion. “One of the big benefits is that cross-functional cohesion that you can get out of it, with those smaller groups, because it’s more intimate and people can speak very much and you do share those understandings.” While Eduardo felt that the workshops were generally an effective way to support the development of a collective understanding, he explained that their potential limitation was that the understanding reached was only relevant to those within the workshop group. Eduardo explained that, “you need to experience it to fully understand it.”

4.6 Wider staff engagement

The primary purpose of this study was to develop a collective understanding within a small group of staff. These results are viewed through the CHAT framework, where the interactions between activity systems are explored. While the workshop group are the key activity system analysed, their interactions with the wider school community are also explored as a way to understand the complex processes involved in developing a collective understanding. To ensure that the process was inclusive and transparent, and that the understanding reached would be meaningful to all staff, efforts were made to involve the wider staff in this process. A number of opportunities for engagement were created throughout the time of the workshops. Workshop videos were shared on the staff forum, making them accessible to all staff. A forum page was created to share resources and initiate discussion relating to the workshops and the link to this forum was shared with all staff. The workshop group also fed back to their colleagues, and were able to share their colleagues responses and ideas at the workshops. These three measures, and the varying degrees to which they engaged the wider staff, are discussed below.
4.6.1 Workshop videos

![Staff news -> Future Ready - Join the discussion!](image)

**Staff news -> Future Ready - Join the discussion!**

by Nathan Caivert - Wednesday, 2 August 2017, 11:38 AM

What does it mean to be **Future Ready**?

Invest 3 minutes and 30 seconds watching the attached video to find out what the Future Ready workshop group got up to in workshop 1, then take a look at the attached studies and get involved by joining in the discussion.

Discussion questions are in the video. We look forward to hearing from **you** (whether you're a support staff member, teacher or administrator) so that together, we can build a common understanding of Future Ready.

![Video player]

**Figure 38.** Workshop 1 Forum post.
Staff news -> "The best way to predict the future is to create it"

by Nathan Calvert - Sunday, 3 September 2017, 1:24 PM

Chris Clay, a TEDx Keynote Speaker and the founding Education Director of The Mindlab, joined the Future Ready workshop group to lead us in a discussion on ‘Wicked Problems’ (problems spanning multiple domains that are unsolvable, highly complex, uncertain, and value-laden e.g. climate change). His workshop addressed many key issues that will have a direct influence on the future of education and the future of our world. Chris challenged our individual and collective thinking, and I highly recommend taking 8 minutes to watch the attached workshop overview, which contains snippets that cover:

- Technological unemployment
- Effects of an automated workforce
- Linear vs Exponential growth
- The purpose of education
- A new way of looking at Collaboration
- Wicked Problems as Wicked Opportunities
- Creating the Future
- Future Ready

If you have a little longer to engage with some highly complex ideas, I suggest you watch the workshop in its entirety. I guarantee that it will be more stimulating, thought-provoking and challenging than tonight’s episode of The Block.

The overview can be found here:

The complete workshop can be found here:

Figure 39. Workshop 3 Forum post.
One of my roles during the workshops was to video the speaker and the interactions that took place during each workshop. Upon completion of the workshop, I uploaded the video of the workshop to YouTube, made the video private so that only Kristin staff were able to view it, and shared the link in the staff forum, as shown in Figures 37 and 38 above. To engage the largest number of staff possible, a short overview of each workshop was also created. This was an edited version that gave snapshots of the most salient parts of each workshop, and teasers to entice staff to watch the complete videos. The videos enabled all staff to see what had happened at the workshops, and ensured that the entire process was transparent. To make it clear that wider staff engagement was necessary to the development of a collective understanding, resources that the workshop group had used were attached to the first forum post (see Figure 37), and discussion questions (e.g. which 21st century skills do you feel are the most important for a student to be FR?) were shared within the video overviews. The forum post ended by asking for responses and feedback.

However, despite 28 staff watching the overview of the first workshop, no feedback was received. I discussed this lack of engagement with a colleague, who suggested that staff may not feel comfortable posting their thoughts on the whole staff forum, as replies to forum posts are emailed to all staff. Agreeing with this feedback, I asked the school’s ICT department to set up a separate forum page for resources and discussions relating to the FR workshops. Once it was set up, staff were made aware of the new forum in a post about the second workshop (see Figure 39).

Figure 40. Workshop 2 forum post.
4.6.2 Future Ready Staff Workshops Forum

The FR staff workshop forum was set up as a purposeful online space where staff could access resources and contribute to discussions. It included a discussion board, pages containing information about each workshop, and a section containing the resources shared in the workshops, as well as other resources relating to future-focused education. The first discussion post started with the question, ‘Which 21st century skills do you feel are the most important for a student to be FR?’ This post attracted two responses, one from a workshop group participant and one from another staff member. The response from the non-workshop group staff member was a thoughtful, detailed response and showed a willingness to engage with these ideas. This
A staff member also initiated the next forum post, which I responded to. After Ally Bull’s workshop, I posted an adaptive challenge I was facing, and two workshop group participants responded with their questions for me to consider. Other than these examples of interaction, the only other use of the discussion board was for a workshop group participant to use the forum to advertise an event that was related to future readiness in education.

Alongside the low use of the Future Ready forum, the workshop videos also had limited impact. The number of views is shown in Table 15 below.

Table 15
Total Views of Future Ready Workshop Videos

<table>
<thead>
<tr>
<th>Video</th>
<th>Lifetime views</th>
<th>Upload date</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR 5 overview</td>
<td>16</td>
<td>25 Sep 2017</td>
</tr>
<tr>
<td>FR workshop 5</td>
<td>8</td>
<td>25 Sep 2017</td>
</tr>
<tr>
<td>FR workshop 4</td>
<td>8</td>
<td>9 Sep 2017</td>
</tr>
<tr>
<td>FR workshop 4</td>
<td>12</td>
<td>5 Sep 2017</td>
</tr>
<tr>
<td>Chris Clay overview</td>
<td>29</td>
<td>2 Sep 2017</td>
</tr>
<tr>
<td>FR week 3</td>
<td>23</td>
<td>1 Sep 2017</td>
</tr>
<tr>
<td>Fr workshop 2 overview</td>
<td>29</td>
<td>16 Aug 2017</td>
</tr>
<tr>
<td>Future Ready workshop 2 Andrew Churches</td>
<td>16</td>
<td>15 Aug 2017</td>
</tr>
<tr>
<td>Future Ready workshop 1 overview</td>
<td>28</td>
<td>16 Aug 2017</td>
</tr>
<tr>
<td>FR Workshop 1 for sharing</td>
<td>9</td>
<td>28 Jul 2017</td>
</tr>
</tbody>
</table>

YouTube Analytics (YouTube, 2017). Retrieved November 17, 2017 from https://studio.youtube.com/#/channel/UCov0pqY4_N2kwpSmh3Ak_3w/videos

The videos were only accessible to staff who had clicked on the link in the staff forum, therefore each of these views is that of someone within Kristin School. Kristin has approximately 230 staff. The most-watched overview videos (Chris Clay/Andrew Churches) attracted 29 views. If all views were from different individuals, this would represent slightly more than 12% of the organisation. However, it is likely that the number of individual views is much lower. The most-watched full workshop video (Chris Clay) attracted 23 views, representing up to 10% of the organisation. Workshop participants’ views are also included in these statistics, as participants who missed a workshop were required to catch up on the workshop videos before attending the following workshop.
4.6.3 Workshop group’s engagement with staff

One of the tools used to determine whether the workshops had an impact on the wider staff was a survey, which was sent to the workshop group after the final workshop. One of the questions asked the workshop group to consider how frequently other staff members had initiated conversations regarding the FR workshops with them over the course of the workshops (the list of workshop group participants was shared with all staff via email, so staff were aware of who was participating). Participants had to choose a response along a scale of 1 (never) to 5 (daily). The question and responses are shown in Figures 42 below.

![Survey Question](image)

**Figure 43.** Post-workshop survey question 9 responses.

The responses to this question indicate that non-workshop group participants had limited engagement with the workshop group regarding the workshop content, and were neither interacting with the content in the online forum or with workshop group members within their
own contexts. Part of this may also be due to a relatively low level of workshop-group-initiated conversation. Question 8 was very similar to question 9, but instead of asking how often staff discussed content with the workshop group members, it asked how frequently the workshop group discussed content with staff. The same scale was used for responses as in question 8 (1 = never, 5 = daily), and the results are shown below.

**Figure 44.** Post-workshop survey question 8 responses.

While the workshop group initiated conversation more frequently than the staff, the levels of discussion initiated were relatively low. Just one participant discussed workshop content with staff daily, six discussed it frequently, three occasionally and surprisingly, two never discussed workshop content with those outside of the workshop group. The low levels of engagement with the workshop videos and forum may have been associated with low levels of discussion about the workshop content taking place throughout the school.
4.6.4 Personal engagement with the wider staff

Although I was not a participant in the workshops, I advertised, organised and attended each workshop, so also had the chance to engage with the wider staff on this topic. As the project leader undertaking practitioner research, I spoke about the project to groups of staff many times throughout the project. Before the staff survey, I explained the purpose of the survey at a whole-school staff meeting. I also reported the results of the staff survey at Junior, Middle and Senior School staff meetings, and promoted the workshop series at a whole-school staff morning tea. I was therefore the staff member who most staff associated with the project, and therefore received a number of questions throughout the project. These interactions occurred from the start of the project and still occur currently, albeit with less frequency as time goes on.

When the FR workshops were advertised, one staff member approached me to ask if they will be about how we can improve the transition between the Junior, Middle and Senior Schools. My response was that this may be a small aspect, but the project will predominantly take the lens of a post-school understanding of FR. Three weeks after the workshops started, a staff member asked if she could be involved as she had heard about how insightful they were from another workshop participant. As two of the six workshops had passed, this was not possible.

Throughout the workshops, a number of staff asked in passing how the project was going. Most questions seemed to be asked out of courtesy rather than a genuine desire to know the content that was being discussed and the understanding being reached. At times, I mistook the intent behind this questioning, as illustrated in the short vignette below.

The morning after the third workshop, one of the catering staff stopped me in the hall to ask how the workshops were going. Excited by her interest, I enthusiastically started telling her about the workshop speaker’s statement that due to automation ‘we’re staring down the barrel of a jobless future’, and how this had led to a debate about the purpose of education, followed up with discussion about Universal Basic Income and when the Singularity will occur. She waited patiently for me to finish, before responding, “Mmmhmmm, but what I really wanted to know was whether the food we sent up was OK?”
In spite of these sometimes humorous interactions, it was obvious that some staff had clearly engaged with the content being shared on the forum. One example of this was Joan, a Junior School teacher who is also a mother and grandmother.

On the 9th of September 2017, Joan came into my classroom after school and promptly asked why the videos had stopped. I explained that the workshops had finished, so I did not have anything else to post. Disappointed, Joan told me that she had watched all of the videos and had found Chris Clay’s particularly interesting. Joan said that she had been unable to attend the workshops, but had spent her weekends watching the videos. Interested, I asked why. Joan explained that she noticed a small level of change in the world between when she grew up and when her daughter grew up, but had noticed significant change between the time when her daughter grew up and now, when her young grandson is growing up. She told me that she is concerned about the future world that her four-year-old grandson is growing up in. Joan finished the conversation by thanking me, saying that the videos had helped her to become knowledgeable about the future world, which she wanted to be for the sake of her grandson.

The engagement referred to thus far occurred with the school staff. To promote the project within the wider community, I was asked to write an article for the bi-annual school magazine Kaleidoscope (see Figure 44). Upon publication, a parent of one of the children I teach came into the class to say he had read the article, was very interested in the topic and would like the findings of the completed thesis to be shared with him. I had a number of conversations with staff who had read the article, and later in the year another parent also approached me to ask for the findings to be shared with her. While it seemed to be well-read, the purpose was to feed back from the workshops rather than provide an avenue for further engagement.
We need to prepare our students to be ready to create the future in which they wish to live.

"We need to prepare our students to be ready to create the future in which they wish to live."
4.6.5 Summary of wider staff engagement

To ensure that all staff were able to have a degree of involvement in the process of developing a collective understanding of FR, multiple avenues for engagement were provided. Workshop videos and resources were shared with all staff, a purpose-built forum was created to foster discussion, and most of the workshop participants, along with the project leader, attempted to engage with the wider staff to consider the ideas discussed. Based on participant feedback, the interactions between the two activity systems of Kristin School and the workshop group seemed to be quite limited. In spite of numerous attempts to engage the wider staff, only a small number showed a deep engagement with the workshop content or process. Reasons for this lack of engagement need to be further explored so that a better understanding of how to engage large staff groups when attempting to develop a collective understanding can be developed.

4.7 Implementation

This section focuses specifically on research question 2, *What was the professional and personal impact of this participation?*

Kristin School invested in this project through the payment of workshop facilitators and by releasing staff from their regular after-school duties to attend. “From an organisational perspective, the human resource and financial investments placed in professional development (PD) are effective only to the extent that: (1) employees learn during activities, and (2) use and maintain what is learned when back in the workplace [...]. Ultimately, PD learning should also have a positive impact on organizational outcomes” (Sankey & Machin, 2014, p. 241). From the data analysed, it is clear that employees learned during the workshops. The use and maintenance of what was learned was explored over the following six months since the completion of the workshops.

The successful transfer of PD learning to the workplace is determined by what occurs prior to, during and after participation (Burke & Hutchins, 2008; Machin, 2002). At each of these stages of the transfer process, motivation plays a critical role (Grossman & Salas, 2011). To determine levels of motivation at the end of the workshop survey, participants were asked about their level of interest for involvement in this area in the future. The results, shown below, show that
participants finished the workshop series with very high levels of motivation.

Lambert (2002) stated that “Reflective practice consistently leads to innovation. Reflection enables participants to consider and reconsider how they do things, which leads to new and better ways” (p. 37). The workshops, concept mapping, interviews and follow-up conversations all allowed participants the opportunity to reflect both on the workshop content and the way it could be operationalised within their own context. According to Gilbert et al., (2015), “Teachers need more opportunities to [...] engage with ideas at a deep level” (p. 12). While the workshop series provided these opportunities, it took time before the thinking that took place in the workshops translated into a change in practice. When deeper level cognitive change occurs it takes time to contextualise and operationalise these new understandings. According to Sannino et al. (2016) “Expansive learning can lead to qualitative transformations both at the level of individual actions and at the level of the collective activity and its broader context. When learners pursue and grasp instantiations of the expanding object of their activity, they also construct a new motive and new long-term engagement” (p. 603).
Each of the workshop group participants spoke about the impact that participation in the workshop group had on them professionally or personally. While some took tangible action to further their understanding in this area (such as Michelle who enrolled in and is currently undertaking a Postgraduate certificate in Applied Practice through The Mindlab by Unitec), others applied their learning in their personal lives to change the way they approached problems faced (such as Eduardo’s use of curious questioning techniques to discover ways to become more efficient with his time). The participants who are teachers were able to explain ways they would put their ideas into practice within their classroom, and the support staff articulated the benefits of having a wider perspective of ideas through which to view their own role. Mercer (2003) suggests that the learners (in this case the workshop participants) should build the foundation for their subsequent joint activity. While the activity undertaken by each participant was different, it was based upon the collective understanding they had developed.

Michelle explained that she spent a lot of time ruminating over the workshop content before ways to implement it into her practice became clear. In fact, it was three months after the workshop series when Michelle took tangible action within her classroom. As highlighted in her vignette, Michelle found the workshop on curious questioning highly impacting, and decided to trial the use of curious questioning with her Junior School students. Six months after the workshop, Michelle spoke at a Junior School staff meeting about the curious questioning programme she had developed. “My one best thing this term has been focusing on curious questions. We have dedicated one period per cycle to curious questioning, where our students are inquiring into something they’re genuinely, personally interested in. They’re starting to understand that there’s no end point to learning - just more questions. And they’re transferring their new understanding of questioning by asking questions to their peers about their individual inquiries. It’s been a really powerful tool.” One of Michelle’s colleagues said she was initially hesitant to try out the curious questioning programme Michelle had piloted, as it felt like “something more on top of my already busy workload”. However, once she saw Michelle’s passion and the impact it was having on her students, she bought into the rationale behind the action and carried out the programme with her students also.

Eduardo took action by inviting other staff to become engaged in this area of learning. He found a workshop called FutureFit that was being run in Auckland, which focused on similar themes, then invited a group of colleagues from his own department to attend. After making the
workshop group aware of this, Olivia booked a school van, and a total of seven staff attended (three workshop and four non-workshop group members). The FutureFit workshop focused on the future of work and the skills necessary in this future, and provided a catalyst for greater discussion of these areas with the wider staff. For Charlotte, the catalyst for action was when the workshop “became real” a few months after the workshop series. Charlotte had listened to a podcast about new uses for AI and the impact this was having. Charlotte explained, “Chris’ talk was provocative, but it wasn’t until seeing some of what he’d said coming through in real life that it made an impact.”

When asked about the personal impact of participation in the workshop group, Eduardo responded, “I have also learnt a lot which can be applied to my personal life. As an example, I liked the new question that Ally Bull asked me "Are there any advantages of [...]" This is changing my way of thinking about negative events.” The personal impact of participation for Emma came about through a process of reflection. Emma explained, “I personally felt very challenged to consider my own readiness for the future. I felt personally challenged by the session by Ally Bull and the curious question "How might I be in the wrong?" and the session on wellbeing and soft skills by Emma Woodward. How am I displaying the qualities that I recognise as being very important for our young people?” Frances felt that “many of the learnings are equally applicable outside of the workplace”, and Olivia felt that the workshops “challenged my thoughts and understanding of what will benefit students departing my class and the wider school community through engaging and interesting discussions and guest speakers.” Louise explained that “many of the pedagogies shared by the presenters gave me hope for the future,” and Kent appreciated the chance to “meet such switched on colleagues and get to know them further.”

A Society for Human Resource Management [SHRM] (2016) report on employee job satisfaction and engagement found that 43% of employees rated “meaningfulness of job” as very important to their job satisfaction. Meaningfulness of job is defined as “understanding how your job contributes to organization’s mission” (SHRM, 2016, p. 6). The report states that “making a difference toward a cause that is bigger than any one individual or the organization can offer a sense of fulfillment to employees” (SHRM, 2016, p. 33). Due to the cross-departmental nature of the workshop group, participants were able to meet and develop relationships with staff outside of their usual work context. Six participants spoke about how participation in the workshop group had improved their connection to other employees within
the school whom they would not normally interact with. In addition to this, four participants spoke about how participation gave them a greater awareness of what happens in areas outside of their own department. The two support staff expressed a greater understanding of the educational aims of the school and could more confidently articulate their role in this.

The implementation of what was learned in the workshops was deliberate and ongoing for Elizabeth. “In the framework of activity theory, intervention into practice must facilitate and support the process of ‘social learning’ in which practitioners involved in and affected by it undertake the initiative to reforge objects of their own current work practices (or activity systems) — that is, reforging what they are doing and why” (Yamazumi, 2007, p. 21). Elizabeth spoke at length about how she had synthesised the ideas shared in the workshops and put these into practice, both in her classes and with her colleagues. Her operationalisation of the workshop content is recorded in the case study below.

Case study 3: Elizabeth’s action

In the week prior to the start of the 2018 school year, I met with Elizabeth and five other available workshop participants to discuss their thoughts on possible next steps for the project. I shared my view that the project had been very successful for those the workshop group, but has had little impact upon the school as a whole. I went on to ask how we could engage staff outside of the workshop group in the learning that had taken place. Elizabeth spoke about the need for other staff to see tangible benefits for themselves and their practice before they would buy-in to the understanding developed. She went on to explain how the contextualisation and operationalisation of the workshop content had benefited her own practice:

“21st century skills, wicked problems, multiple perspectives - that has science written all over it. So to hit a number of things I decided to do communication and collaboration as a staff focus for the science department. A lot of science is learning a new language, keywords etc. so that’s where the communication comes in. It also fits in well with our focus on differentiation, in addressing the needs of our students who are not only learning English, but trying to learn new science vocabulary as well. So I’ve asked Gabriela [teacher of EAL (English Acquisition Learners)] - We’re getting her to give us strategies which we can use
with our EAL students and also with our proficient speakers to help them acquire the new vocab they’ll need. Then with collaboration, well in the real world chemists and physicists collaborate. Biologists collaborate. And no one is asking whether you did IB [International Baccalaureate] or NCEA [National Certificate of Educational Achievement] Biology once you’re in the workforce. But what are we doing? We’re teaching the two side by side but with no connection between them. They’re totally siloed between IB and NCEA. I’ve aligned their curriculum so they’ll be doing the same topic, e.g. cells, at the same time. We’re going to start the year with a shared lunch so that they can actually get to know each other and see how many people are covering similar learning, and see that there’s this massive pool of people to collaborate with and give support. And that feeds into student wellbeing - seeing that they’re not isolated, that they’re part of a bigger group and a community of learners. But it’s not just the students - it’s the teachers who need to collaborate too. So I’ll be collaborating with Chris, who is teaching NCEA, and I’m teaching IB, and we’ll be working together with the students to create a display outside of our classrooms which shows the evolution of our learning and the interconnectedness between the IB and NCEA Biology. We can get the different perspectives on each topic, and it will narrate our learning over the course of the year. It’ll also show how each individual topic is linked - so I can say to a student - there’s cells, how is that linked to evolution and genetics, and it’ll help them see the causes of the wicked problems we’ve talked about - say, there’s climate change, but what are all of the different pathways that come into it? What are the multiple perspectives on the issue and how can we see different things contributing to this happening? What’s important is teachers putting it into practice and then engaging others in the journey.”

While inspired by Elizabeth’s enthusiasm, I was interested to see whether it would continue once students returned and preparation, assessments and marking started to take up more and more of her time and energy. When Elizabeth received the draft copy of her vignette via email, she replied to me with this message and the screenshot (below):

“I think you will be interested in what I have done with the workshop material and our Y9 fusion group. A snippet below to whet your appetite!”
To find out more, I met with Elizabeth in April 2018, just before Term 2 began. Elizabeth spoke about her Year 9 Fusion class, which is a fusion of multiple subject areas to help students make connections and learn across the disciplines of English, Science and Humanities. While the idea was not Elizabeth’s to begin with, she enthusiastically linked up with an English and Humanities teacher to pilot the programme. This action may be explained by Runhaar et al. (2014), who found that “The more teachers were convinced of their common goal and the fact they needed each other in reaching this goal, the more interpersonal learning activities took place” (p82). Elizabeth set up the course content above and used Future Ready as a way to hook the students into the programme, and help them to understand the ‘why’ behind the concept of the trans-disciplinary approach to the Fusion class.

After talking me through the work she had done to hook in the students, Elizabeth pulled out her tablet and showed me a mind map that a Year 9 student had completed to show her understanding of FR.
Figure 48. A Year Nine student’s perspective of Future Ready.

The mind map shows a developing understanding of the way that different elements will impact upon the student’s personal future such as getting a job, and the earth’s future, such as disaster prevention. The reflection in the bottom left corner shows that the student has thought carefully about the content learned through the Fusion class and has summarised Future Ready in their own words: “Kristin doesn’t exactly prepare you for huge problems like this but can inspire or set a chain of events of preparation”. The student is beginning to show an understanding that education is not just about learning about things, but about setting off a chain of events to prepare them to live in, and to create, the future world.
When the project began, I could not have predicted that I would end up viewing mind maps made by students to show their understanding of FR and how they felt the tagline applied to them. Actions carried out by the workshop group showed that the learning that occurred was internalised, contextualised and operationalised in many different ways, as highlighted by the individual vignettes and the action shown here. Not only had action occurred that was not able to be predicted from the start, due to its organic nature, but the action was intrinsically motivated and sustained over time. The new forms of action taken were sustained over the nine months from the end of the workshops until the time of writing. The actions taken seemed to have been made based on new beliefs formed, which were a direct result of transformation of the workshop group activity system. This is in accordance with Sannino et al. (2016), who explain that “Transformative agency is a quality of expansive learning. Learning expansively requires breaking away from the given frame of action and taking the initiative to transform it. The new concepts and practices generated in an expansive learning process carry future-oriented visions loaded with initiative and commitment by the learners (p. 603).”
5. Conclusion, Implications & Limitations

My particular type of research, while sharing elements associated with practitioner research and action research, was not wholly typical of either. Whilst the research was conducted in my context of employment, it was not directly related to my classroom practice as is usually the case for practitioner research. The involvement of support staff in school-wide PD is also uncommon. Further to this, very little research has been conducted around the development of a collective understanding of an organisation’s tagline. Due to these factors, my research project has implications at both the theoretical as well as the practical level. The final chapter summarises the key conclusions, followed by an examination of the study’s implications, before its limitations and areas for further research are explored.

5.1 Conclusion

The findings of my study aligned with the literature that suggests collective understanding is developed through a collaborative process (Stahl, 2005; Puntambekar, 2006; Burnard & Dragovic, 2014). Whilst the content presented at the workshops was necessary to scaffold the thinking of participants, it was the opportunity for discussion of this content that resulted in a collective understanding. Further to this, the involvement of a cross-faculty network of staff was necessary for participants to gain an understanding of the different areas of the school. The inclusion of both teachers and support staff ensured that multiple perspectives were shared, different contexts were considered, and the views of diverse stakeholders were used to inform the group and provide a fuller picture than what could have been offered by a homogenous group of staff.

High levels of participant motivation during PD generally result in high levels of transfer of learning to the workplace (Beier & Kanfer, 2010; Feldman & Ng, 2012; Sankey & Machin, 2014). In this study, participants showed strong motivation to participate. Levels of motivation were high throughout the PD intervention and at its conclusion. The collective understanding developed was implemented in different ways by participants. While the study was not longitudinal in nature, the action taken by some participants showed that transfer of learning to the workplace had started to occur. A number of other organisational benefits came from participation in the study. Participants enhanced their relationships with those outside of their direct area of work, which resulted in a greater sense of belonging. They also developed a
greater understanding of how their individual role fit within the organisation’s overall purpose, leading to the development of a greater sense of meaningfulness (SHRM, 2016). Participants’ greater clarity about the meaning of the FR tagline resulted in purposeful actions that aligned with this new understanding.

My study’s findings aligned with the literature on effective PD (Day, 1993; Garet et al., 2009; Gilbert et al., 2015). Facilitators took into account prior knowledge and context, engaged participants through discussion and debate, provided time and space to think about the content shared, and aimed to “light a fire” rather than ensure that participants acted immediately. As Engeström (2001) states, “people and organizations are all the time learning something that is not stable, not even defined or understood ahead of time” (p. 137-138). In this study, the participants were learning something undefined, and therefore the results were not predictable. The PD intervention resulted in a shift in mindset for many participants, who went from seeing the future as something to be feared, to seeing it as something people can shape. This new optimism was an unexpected result of participation in the workshop group.

A tagline (or motto, mission statement etc.) will have a much greater impact if all staff are involved in its development (Barnett, 2012; Hatch, 2008; Huffman, 2003). In the case of my study, the tagline had already been introduced, so its meaning was explored after its introduction. This study found a positive relationship between the level of involvement staff had in the process of developing a collective understanding and the level of impact this new understanding had. This was expressed by Eduardo, who stated that “you need to experience it to fully understand it.” Despite multiple opportunities for the wider staff to engage with the workshop content, the degree of engagement was low. The study therefore had little impact on staff who were not directly involved in the workshop group. This study found that the greater the level of involvement staff had in the process of developing a collective understanding, the greater the impact of the collective understanding, and the higher the likelihood was of them acting upon this.
5.2 Theoretical implications

From a broad perspective, my findings contribute to the existing literature on the development of a collective understanding (DuFour & Eaker, 1998; Puntambekar, 2006; Wise, Stutchbury & Cooke, 2016). This study added to the research literature on the development of a collective understanding of taglines in particular. It may serve as a guide for organisations who believe that their tagline should not just be considered as a marketing slogan, but want it to have an impact upon the thinking and actions of staff. For these organisations, it is recommended that staff are involved in the development of a new tagline/motto/mission statement etc. to ensure a collective understanding is developed across the organisation. In school contexts in particular, it is recommended that both teaching and support staff are involved in the development of a collective understanding to ensure all school staff are aware of the collective understanding and understand how their role fits within the greater organisation.

Concept maps are typically used to show an understanding of a fixed body of knowledge (Novak, 1998; Zwaal & Otting, 2012). In my study, concept maps proved useful to focus learners on the core purpose of the workshops, to draw connections between workshop areas, and to determine individuals’ understanding of FR through the ranking of proposition statements. The use of concept maps should therefore be considered as a way to scaffold and connect the thinking of learners, alongside their use as a tool for the assessment of subject-specific knowledge.

5.3 Practical implications

For practitioner researchers considering undertaking this type of research, I make several recommendations. First, view your research as a wicked problem that will not have one simple answer. Bear in mind that it will require multiple perspectives to be examined, and that while you may improve a problem, you should not expect to solve it. Second, work to understand the complexity of the system within which your research takes place. Your relationship with the stakeholders will have a significant impact on your project, and while your research will address one small piece, the puzzle that makes up the organisation is much greater. Third, be flexible. As your project unfolds it will morph and change, and it is important to be able to adapt as you go. Finally, understand the time commitment involved when researching an area that is not clearly defined.
5.4 Limitations and recommendations for further research

The findings of the research are limited in their generalisability due to the interpretative methodology used in the study. Whilst qualitative research has a high level of validity, there is a lower level of reliability (Davidson & Tolich, 2003; Denzin & Lincoln, 2005, Cohen et al., 2007). The nature of the participants, their interactions with each other and the “group dynamics” are unable to be controlled. In addition to this, the low number of participants involved further limits the generalisability of the results. Therefore, the findings of my study may not be directly replicated if the same process was undertaken with other participants. For future research, it would be recommended to repeat the workshop process with a different sample group and to compare the results of the two workshop groups to see whether it was the process, or simply the dynamics of the particular participants in this project, that had a greater influence on the development of a collective understanding.

In relation to this, the scope of the research was very narrow. The participants were all employees of one school in Auckland, New Zealand. To better understand the effect that the context (Kristin School) in which the study occurred had on the results, it would be of interest to replicate the study in a different educational setting in New Zealand or another country.

The study utilised a workshop approach to support the development of a collective understanding. Whilst participants felt that this was effective, it was limited in its impact on the wider staff. A more targeted approach may have been necessary to engage the wider staff, and ways to do this need exploring. There may be other types of activity that could be undertaken to develop a collective understanding which better involves all staff. For future research, it would be beneficial to examine the effects of different approaches to the development of collective understanding.

Another limitation of the study is the cross-sectional nature of the data. While follow-up conversations were initiated by some of the workshop participants to discuss their action, no formal follow-up was carried out. Therefore, there was no way to investigate the long-term impact of participation. Hence, future research should include longitudinal data on the impact of participation.
As identified in the literature review, there is a gap relating to the development of a collective understanding of a tagline. This is therefore recommended as an area for further research. There is also a gap in the literature regarding the inclusion of school support staff in whole-school PD interventions, so further studies of the effect of whole-school PD on support staff are also recommended.

Finally, my research aimed to develop a collective understanding, but the quality of the collective understanding was not considered. Participants who shared about the same ideas were considered to have the same understanding, however this may not always be an accurate interpretation. Hence, in future research, the quality of the collective understanding could also be examined.
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7. Appendices

Appendix 1: Staff Survey

"Future Ready" questionnaire

Part of the Kristin Difference is expressed through our tagline, Future Ready. As part of my Master’s study, in collaboration with the Senior Leadership Team, I (Nathan Calvert, Year 1 Dean) am interested in finding out what Future Ready means to the staff as a whole. To benefit the school (and my own research), I’d greatly appreciate your response to the following questions. If you run out of room, please use the extra space provided at the bottom of the page overleaf. For yes/no questions, please circle your response.

Name (optional): ____________________________________________

Job title: ____________________________________________________

Number of years at Kristin: __________________________________

1. Kristin School’s tagline is “Future Ready”. Please define what you think this means: (use as many or as few words as you need to)

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

2. Does this tagline, Future Ready, influence you in your day to day work? Yes No

If yes, how?

________________________________________________________________
________________________________________________________________
________________________________________________________________

3. Does the tagline Future Ready have an influence on the teaching and learning that happens at Kristin? Yes No

If yes, how?

________________________________________________________________
________________________________________________________________
________________________________________________________________

4. Do you feel that the staff at Kristin have a shared understanding of what it means to be Future Ready? Yes No

Is it necessary for staff at Kristin to have a shared understanding of what it means to be Future Ready? Yes No

If yes, how do you see the development of a shared understanding benefitting the school?

________________________________________________________________
________________________________________________________________
5. Is this (being Future Ready) an important issue to be exploring?  Yes  No
Why/why not?

6. Are there any specific areas related to being Future Ready that you feel need greater focus and attention?

7. Are you interested in this area of study, and do you have a desire to be involved in this project in future?  Yes  No
Comments:

Thank you very much for your time! I look forward to sharing the results of the survey with you in the future.

Additional space (please write the number of the question you are responding to):
Appendix 2: Pre-workshop interview

Pre-Workshop participant interview

Name _______________________________ Date __________

Q1. You’re taking a school tour and a prospective parent notices the Future Ready tagline on display. They ask you, what does it mean to be Future Ready. What would you say? On a scale of 1 to 5 (1 being very unconfident, 5 being very confident), how confident would you be in sharing your understanding with them?

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Q2. A new member of staff joins your curriculum team. After receiving an email from you that has Future Ready in its signature, they ask, how do you prepare students to be Future Ready? What would you say? On a scale of 1 to 5 (1 being very unconfident, 5 being very confident), how confident would you be in sharing your understanding with them?

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Q3. In the previous two questions you shared your own understanding of the school tagline, Future Ready. On a scale of 1 to 5 (1 being very unconfident, 5 being very confident), how confident are you that a Kristin staff member from another department would share a similar message to the one you have shared for the previous two questions?

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<th>Very unconfident</th>
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Appendix 3: Post-workshop interview

Post-Workshop participant interview

Name ___________________________ Date ___________

Q1. You’re taking a school tour and a prospective parent notices the Future Ready tagline on display. They ask you, what does it mean to be Future Ready? What would you say? On a scale of 1 to 5 (1 being very unconfident, 5 being very confident), how confident would you be in sharing your understanding with them?

Very unconfident 2 3 4 5 Very confident

Q2. A new member of staff joins your curriculum team. After receiving an email from you that has Future Ready in its signature, they ask, how do you prepare students to be Future Ready? What would you say? On a scale of 1 to 5 (1 being very unconfident, 5 being very confident), how confident would you be in sharing your understanding with them?

Very unconfident 2 3 4 5 Very confident

Q3. In the previous two questions you shared your own understanding of the school tagline, Future Ready. On a scale of 1 to 5 (1 being very unconfident, 5 being very confident), how confident are you that:

A) another staff member from the workshop group would share a similar message to the one you have shared for the previous two questions?

B) a Kristin staff member from another department who hadn’t been involved in the workshops would share a similar message to the one you have shared for the previous two questions?

Very unconfident 2 3 4 5 Very confident
"Future Ready" questionnaire

*Required

Name:
Your answer

Did you feel this workshop series was valuable to you professionally? Why/why not? *
Your answer

Did you feel this workshop series was valuable to you personally? Why/why not? *
Your answer

Were the workshops an effective way to develop a common understanding of Future Ready? Why/why not? (consider content, process, timing, group dynamics) *
Your answer

Is it possible for a group of people to come to a shared understanding of a complex concept like "Future Ready"? *
Your answer
Rate the workshops in terms of their importance in developing a common understanding of Future Ready *

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<tr>
<th>1 (insignificant - didn't introduce new ideas or challenge existing ideas)</th>
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<th>5 (had a profound impact on my thinking)</th>
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<td>21st Century Skills (Nathan Calvert)</td>
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<td>Digital Fluencies (Andrew Churches)</td>
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<td>Wicked Problems (Chris Clay)</td>
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<td>Supporting Future-focused learning (Ally Bull)</td>
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<td>Maintaining wellbeing (Emma Woodward)</td>
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During the workshop series, how frequently did you discuss workshop content with other staff? *

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During the workshop series, how frequently did other staff approach you to discuss workshop content? *

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What suggestions do you have for ways of engaging the wider staff with this area? *

Your answer
After being a part of this workshop group, do you think this is an important issue (being Future Ready) for the wider staff to be exploring? *

Your answer

Rate the workshops in terms of their relevance to the wider staff *

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During the workshop series, how frequently did you discuss workshop content with other staff? *

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During the workshop series, how frequently did other staff approach you to discuss workshop content? *

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What suggestions do you have for ways of engaging the wider staff with this area? *

Your answer

Imagine we were given 10 PL days to continue this project with the wider staff, and could utilise any of the workshop speakers (or other experts). How would you use this time? *

Your answer

If you were in charge of organising the workshop series for a new group of staff, what would you do differently? *

Your answer

Was any pertinent content was left out from the workshop series? *

Your answer

How will your professional practice change as a result of these workshops? *

Your answer

What should we as a school be focusing on to make our students 'Future Ready'? *

Your answer
What is your level of interest for involvement in this area in the future? *

1 2 3 4 5

No further involvement thanks

Very keen to be involved in future initiatives in this area

Any further comments? *

Your answer

SUBMIT
Appendix 5: Information sheet for participants

**Project title: Developing a common understanding of Future Ready**

**Synopsis of project**

The aim of my research project is to develop a common understanding of the ‘Future Ready’ tagline amongst Kristin School staff. This will be carried out through a series of professional learning workshops involving a group of 8-10 staff members. The workshops will introduce staff to current research on future-focused education and futurist thought regarding predicted global changes that will occur over the next 20 years. The purpose of the workshops is for workshop group participants to synthesise the research shared and use this to develop a common understanding of Future Ready.

**What we are doing**

Eight to ten teaching and support staff will be involved in a series of five workshops. Over the course of these workshops, expert presenters will share ideas about future-focused learning and how we can best prepare our students for an unknown future. A draft workshop schedule is below: (Presenters to be confirmed once Project & Ethics approval have been given)

<table>
<thead>
<tr>
<th>Workshop:</th>
<th>Focus:</th>
<th>Presenter/facilitator:</th>
</tr>
</thead>
</table>
| 1 (Monday July 24, 3:30-5:30 – week 1 of term 3) | - Concept mapping (baseline data)  
- An introduction: 21st century skills’ history and future | Nathan Calvert (project author) |
| 2 (Monday August 7, 3:30-5:30 – week 3 of term 3) | 21st century fluencies for the digital age | Andrew Churches (Vice-president of the Global Digital Citizen Foundation) |
| 3 (Monday August 21, 3:30-5:30 – week 5 of term 3) | Supporting future-oriented learning & teaching | Chris Clay (Award-winning educator, educational consultant) |
| 4 (Monday September 4, 3:30-5:30 – week 7 of term 3) | Beyond individual futures: Addressing ‘Wicked problems’ | Professor Ally Bull (Educational theorist) |
| 5 (Monday September 18, 3:30-6:00 – week 9 of term 3) | 3:30-5:00 - Maintaining wellbeing in a rapidly changing world  
5:00-6:00 - Concept mapping post-assessment (individual and collaborative) | TBC  
Nathan Calvert (project author) |

Workshop 1 will give an introduction to concept mapping, gathering baseline data (through concept maps), and analysing 21st century skills. The focus of workshops 2-5 are stated above, and the format to be followed is:
- 1h20m keynote from the presenter
- 30 minutes to discuss the presenter's message and its relevance to Kristin
- 10 minutes to synthesise this information and record it visually through a concept map

Workshop 6 will summarise previous workshops and focus on completing individual concept maps and developing a collaborative concept map. Note that no prior knowledge of concept mapping is required to participate in the workshop group.

**What it will mean for you**

Participation in the workshop group will require a significant time commitment in Term 3. There will be five 2-hour workshops held fortnightly on Mondays in Term 3. You will be excused from attending Monday staff meetings that are held on the same days as workshop groups (permission has already been granted for this by the Senior Leadership Team). In addition to this, all workshop group participants will meet with the researcher for a short (15 minute maximum) pre-workshop interview and a short (15 minute maximum) post-workshop interview. In total, your participation in the workshops is likely to take 13-14 hours of your time over the course of Term 3. There is no financial commitment, and no financial incentive for involvement in the workshop group.

As the aim of the workshop group is to develop a common understanding of Future Ready, discussions from the workshops will be videoed and shared with all staff on the staff news forum. Participants will be able to be identified in the research. If you agree to participate, you will be asked to sign a consent form. This does not stop you from changing your mind if you wish to withdraw from the project. Due to the workshop schedule, it is preferable that any withdrawals occur within 2 weeks after the pre-workshop interview, however you are able to withdraw at any point before the study concludes on Friday, September 29.

Please contact me if you need more information about the project. At any time if you have any concerns about the research project you can contact my supervisor:

My supervisor is Hayo Reinders, phone 815-4321 ext. 8017 or email wreinders@unitec.ac.nz

**UREC REGISTRATION NUMBER: 2017-1044 Calvert**

This study has been approved by the UNITEC Research Ethics Committee from 20 July 2017 to 20 July 2018. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Appendix 6: Participant consent form

Participant Consent Form

| Project title: Developing a common understanding of Future Ready |

I have had the research project explained to me and I have read and understand the information sheet given to me.

I understand that I don't have to be part of this research project should I chose not to participate and may withdraw at any time prior to the completion of the research project on Friday, September 29.

I understand that everything I say during pre- and post-workshop interviews is confidential and none of the information I give will identify me and that the only persons who will know what I have said will be the researcher and his supervisor. I understand that my interviews with the researcher will be audio-taped and transcribed.

I also understand that the purpose of the project is to build a common understanding of Future Ready, so the workshops I attend will be videoed and shared with Kristin staff. My interactions with other staff members in these workshops are likely to be shown in these videos. I understand that I will have access to these videos before they are shared with staff, and have the right to request that my appearance in/interactions with others in the videos be removed before the video is shared. I understand that if I withdraw from the project after the workshops begin, and videos of my interactions in the workshop group have already been shared with staff, these videos will not be removed/edited due to my withdrawal. My interactions in the workshop group will be included in videos up to the point of my withdrawal from the project.

I understand that all the information that I give will be stored securely on a computer at Unitec for a period of 5 years. I understand that I can see the finished research document.

I have had time to consider everything and I give my consent to be a part of this project.

Participant Name: ……………………………………………………………………………………..

Participant Signature: ……………………… Date: ……………………………

Project Researcher: Nathan Calvert Date: ……………………………

UREC REGISTRATION NUMBER: 2017-1044 Calvert
This study has been approved by the UNITEC Research Ethics Committee from 20 July 2017 to 20 July 2018. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Declaration

Name of candidate: Nathan Calvert ...........................................................................

This Thesis/Dissertation/Research Project entitled:

Future Ready: Developing a collective understanding of a school tagline

is submitted in partial fulfillment for the requirements for the Unitec degree of

Master of Applied Practice

Principal Supervisor: Dr Hayo Reinders

Associate Supervisor/s: Dr Lisa Maurice-Takerei

CANDIDATE’S DECLARATION

I confirm that:

• This Thesis/Dissertation/Research Project represents my own work;
• The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.
• Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: 2017-1044

Candidate Signature:  Date: 13/07/2018

Student number: ……1443943………………
Full name of author: ………Nathan Calvert………………………………………….

ORCID number (Optional): …………………………………………

Full title of thesis/dissertation/research project (‘the work’):
Future Ready: Developing a collective understanding of a school tagline
……………………………………………………………………………………………………

Practice Pathway: Te Miro Postgraduate.................................................................

Degree: ……..Master of Applied Practice.................................................................

Year of presentation: ………2018.......... 

Principal Supervisor: …………..Dr Hayo Reinders……………………………………

Associate Supervisor: …………..Dr Lisa Maurice-Takerei……………………………

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Signature of author: …………..

Date: …13…. /……07…/…2018……