
**WHAT ARE THE FACILITATING CONDITIONS
THAT SUPPORT TEACHING AS INQUIRY (TAI)
FOR SECONDARY TECHNOLOGY TEACHERS
WHO ARE MIDDLE LEADERS IN GREATER
CHRISTCHURCH?**

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Abstract

This study aims to propose ideal conditions for Technology teachers to develop effective philosophies enabling them to focus on activities that promote successful learning. This research examines how selected secondary Technology educators, exemplify aspects of Teaching as Inquiry (TaI) effective pedagogies, that support the generation and development of successful philosophies. By identifying five common traits or characteristics, this study enquires what it is they do that supports successful teacher philosophy, generating positive outcomes for learners. It explores how and why Technology teachers have developed this approach, how these traits are connected and inter-related to attitudes and the resulting dispositions they hold, and the philosophies they have developed. In the quest for sustainable conditions, enabling and inhibiting influences are also investigated.

To be fully inclusive of all aspects influencing TaI practice, aspects outside the location of individual inquiry are explored: How individual TaI exists within school culture, faculty, senior administrative and management philosophies within systems where the teacher is employed, and how TaI practice exists within wider national policy. It explains how TaI in New Zealand, appears to flourish within a foundation of Culturally Responsive Pedagogies. It also suggests a simple re-consideration around the nature of individual learners, and how their needs to develop responsive and effective pedagogies, seeing a different 'new construct, end-goal' of future focussed schooling, could conflict with immediate current assessment, and compliance needs. This study concludes by suggesting a set of ideal facilitating conditions that together could enable the development of philosophies supporting the effective pedagogies of Teaching as Inquiry.

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Introduction

This study aims to gain insight into the specificities of how four teachers in Greater Christchurch, appear to know the ‘truth great men know by instinct’, to manage, develop and focus on Teaching as Inquiry pedagogies in the current complex, assessment heavy, secondary teaching environment. Teaching as Inquiry refers to an individual ‘open to new possibilities’ philosophy, evidenced through a continual activity where teachers inquire into the impact of their teaching on their students or colleagues, collectively described as ‘learners’. Pedagogies refers to specific teacher actions or strategies selected with the desire to improve current learning. The two quotes below demonstrate similar perceptions around education spanning over half a century and underpin the philosophical underpinnings of this thesis.

Ideally, what should be said to every child, repeatedly, throughout his or her school life is something like this: 'You are in the process of being indoctrinated. We have not yet evolved a system of education that is not a system of indoctrination. We are sorry, but it is the best we can do. What you are being taught here is an amalgam of current prejudice and the choices of this particular culture. The slightest look at history will show how impermanent these must be. You are being taught by people who have been able to accommodate themselves to a regime of thought laid down by their predecessors. It is a self-perpetuating system. Those of you who are more robust and individual than others will be encouraged to leave and find ways of educating yourself — educating your own judgements. Those that stay must remember, always, and all the time, that they are being moulded and patterned to fit into the narrow and particular needs of this particular society. You and I are the boulder-pushers. All our lives, you and I, we'll put all our energies, all our talents into pushing a great boulder up a mountain. The boulder is the truth that the great men know by instinct, and the mountain is the stupidity of mankind (Lessing, 1962).

In simple terms, if you want to produce innovators – as we claim we want to – everything you would do is the opposite of what we are currently doing in the education system (Gilbert cited in Coleman, 2015, p. 1).

Some teachers appear to be doing the opposite of what these quotes say is happening in the education system, by consistently demonstrating TaI as a part of their everyday classroom practice and consistently achieving innovative, inclusive, and developing teaching philosophies.

This study examines the development of personal, professional philosophies held by four New Zealand secondary Technology teachers who consistently demonstrate TaI. How their philosophies were formed, informed and transformed, and how they enabled changes in practice, from a knowledge-based, assimilated, 'old construct' educational philosophy, to an understandings-based, broad and inclusive, 'new construct' philosophy is the focus of the study.

Teacher inquiry pedagogies or strategies are theoretically supported as socially constructed 'tools' that result in the development of effective teacher philosophies. Perspectives from a national secondary subject expert provided wide reference, and triangulation for findings, supporting or rejecting them as generally typical, or unique experiences. The researcher was challenged throughout the process to keep a focus on just individual influences on personal philosophy, as the complex world of educational perspectives provided a much broader field of intriguing and rich data, much of which had to remain 'parked' for future investigation.

Chapter 1 Teaching as Inquiry

1.1 The New Zealand Curriculum

Teaching as Inquiry (TaI) is a model of pedagogy included The New Zealand Curriculum (NZC) (Ministry of Education, 2007). New Zealand is the only country in the developed world to have a suggested model of effective pedagogy in its national curriculum. New Zealand Curriculum justifies TaI need and hints at the complexity of teacher-learner relationships, “since any teaching strategy works differently in different contexts for different students, effective pedagogy requires that teachers inquire into the impact of their teaching on their students” (p.35).

TaI is described as, “a cyclical process that goes on moment by moment (as teaching takes place), day by day, and over the longer term” (Ministry of Education, 2007, p. 35). This definition of TaI process suggests an adoptive mind-set that ‘becomes part of’ the individual teacher, as opposed to an external compliance process ‘done to’ an individual. This describes an intrinsic professional ‘culture’, that is intended to be long-standing, highly personal, and highly reflective in nature. To illustrate how this TaI ‘culture’ can become part of teacher practice, Iterative Best Evidence Synthesis (BES) (Timperley, Wilson, Barrar, & Fung, 2007), demonstrates how on-going teacher professional learning and development can be integrated through the TaI model. Figure 1 below clarifies how this cyclic process potentially forms into a professional ‘culture’ with interrelated, crucial, component parts.

Teaching as Inquiry

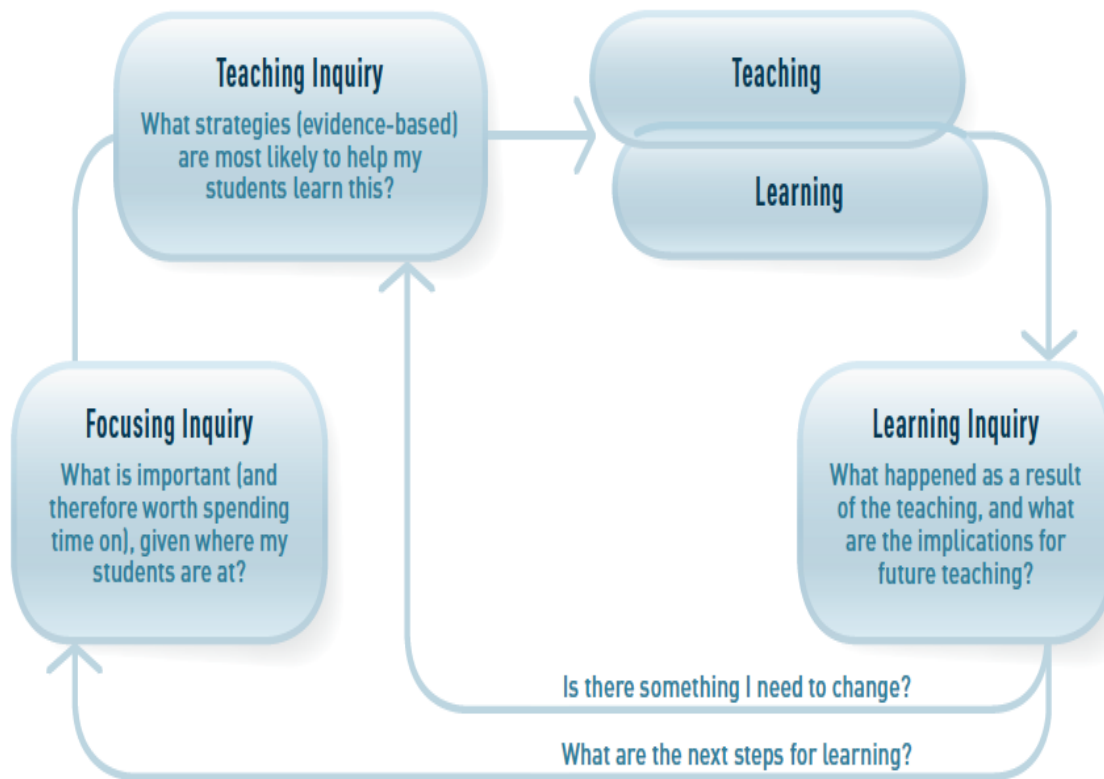


Figure 1: TaI NZC Model (Ministry of Education, 2007, p. 35)

TaI is both an embedded mind-set and an activity, through which the actions and influence of the teacher is viewed, in order that teachers have the best possible, positive influence on the learner. As a cyclic and highly reflective process, TaI suggests a dependence on both the capability and depth of self-knowing through reflection and equally important, the efficiency of wider system support. The wider system consists of school management, culture, relationships, collaboration, communication, policy, and decision-making. If the immediate environment is not constructed with the purpose of supporting TaI, then TaI will not be able to exist within the thinking and core professional activity of the classroom teacher. Positioned in the guidance section of the NZC,

immediately after the learning areas, this unique inclusion of a suggested pedagogical method provides the crucial ‘how’, philosophically human element of NZC implementation.

The first of the three sections in the TaI model, focussing inquiry asks the question “What is important (and therefore worth spending time on), given where my students are at?” (Ministry of Education, 2007, p. 35). Clear personal understanding of individual student need, and where student understandings are currently at, provide an accurate starting point for learning to begin. Efficient systems of relevant data communication prior to the point of entry, the transition *in* for students, and teacher understandings around the gathering and interpretation of learning data are required resources.

The second component of TaI, teaching inquiry asks the question “What strategies (evidence-based) are most likely to help my students learn this?” (Ministry of Education, 2007, p. 35). This activity requires a social activity of collaboration and communication, including a strong understanding of evidenced-based inquiry, relevant and contemporary research, in order for it to occur.

The last of the three components, learning inquiry holds the potential for learning transformation by asking the question, “What happened as a result of the teaching, and what are the implications for future teaching?” (Ministry of Education, 2007, p. 35). This activity requires individuals to

possess a highly developed level of self-reflection and analytical skills, an awareness and understanding of wider policy influences, supported by the desire to be constantly improving on current practice. This individual thinking requires support from the immediate social and wider systems to provide efficient and timely data analysis providing robust evidence on which to base ‘next-step’ decisions both in the short term with individuals, and for longer-term course and curriculum design. All of this is required of every educator within all institutions, if the potential of every learner is to be realised. TaI provides the tool to connect learning areas to the intent, sometimes described as the ‘front half’ of the NZC, embedding within the philosophy of the teacher, communicated via the teacher-learner relationship, and subsequently becoming part of the learners themselves.

1.2 Guided Inquiry

Guided, or learning inquiry is responsible for much of the confusion around the meanings of TaI for educators (Sinnema & Aitken, 2011). Learning inquiry has been a method used by teachers to support student independence in learning, and is particularly common in the primary sector.

Whilst TaI has obvious connections with the nature of guided inquiry and inquiry learning, TaI involves only teachers, analysing and reflecting on their own actions and interventions, looking at what is worth paying attention to when making decisions for teaching and learning activities.

TaI is an activity that has a profound effect on the individual, but this can only occur in a collaborative setting of support and mentorship that is also required for guided inquiry and inquiry learning (Kuhkthau, Maniotes, & Caspari, 2007).

1.3 Practitioner Inquiry

Cochran-Smith & Donnell (2006) present a strong case for the notion that teachers can, and will very soon have to become legitimate researchers. Professional learning and development (PL&D) requires reflection. Many teachers have undertaken self-study as a means to inform and support practice, as the scholarship of Teaching and Learning becomes a more inter-connected activity across communities both within and across schools. This indicates transformation experienced by educators from an individual and self-directed role, to one of collaboration and connectivity, contributions, actions and inquiry, now reaching far beyond their own environments.

Practitioner inquiry is defined as focussing on problems and issues arising from professional practice and from discrepancies between what is intended and what occurs (Cochran-Smith & Donnell, 2006). In NZC (Ministry of Education, 2007) practitioner inquiry is reframed, Teaching as Inquiry, or TaI (refer Figure 1

1.4 Re-packaging the Educational System

The recognition of TaI as a new core pedagogy for teaching is in response to the changing nature of learner needs, forcing changes in the nature of the teacher role. The 20th century Industrial Age, or ‘production-line’ processes of education, required the purpose of schooling as one of ‘sameness’ and the transfer of knowledge likened to the ‘filling of a pail’. ‘Production-line’ attitudes still guide many teacher actions, 16 years into the 21st century; Barber suggests system change may be overdue:

In the 20th century, we expected school systems to sort people: those who would go to university and those who wouldn't, those who would do professional jobs and those who wouldn't, and those who would fill the semi-skilled and unskilled jobs for which minimal learning at school was required. In the 21st century this is not good enough - not good enough morally, not good enough socially and not good enough economically.

Machines can do much of this work better than people, People should celebrate this, but the difficulty is that this transformation leaves millions of people without work, especially young people. This is a worry that only the well-educated will thrive in the world that is coming, however surely every young person has the potential and must be given the opportunity to graduate from high school ready for university, a career, and citizenship. (Barber cited in Fullan & Langworthy, 2014, p. 7).

In the 20th century or 'old construct', knowledge was socially constructed as a static commodity possessed by a select few and as such, the select few held the power and control seeking out and destroying the threat to that power, collaboration. The 21st century Knowledge Age or 'new construct' sees knowledge as a fluid and dynamic entity, the brain now known to be flexible in its capacity like an intellectual 'muscle' with the potential to be strengthened and increased.

Recent technological advances have increased communicational connectivity, and seen vast quantities of information easily accessible to the majority. This connectivity enables the acceleration of information into knowledge and understanding and as a result, the 21st century learner demands that the roles of education, the learner, and the educator to shift. The wide accessibility of information means that teachers can no longer be the superior source of information available and learning priority has shifted from knowledge acquisition to adaptability (Gilbert, 2005).

The reasons for this shift and its impact on the purpose of schooling suggest that the knowledge is now, not the important factor. In ‘Catching the Knowledge Wave’ Gilbert suggests it is the relationships, which the technology enables, that requires focus. “What really matters in the new age, isn’t information at all. What is really significant is the relationships between people and between people and organisations, which are made possible by the new modes of communication” (Gilbert, 2005, pp. 120-121). These new modes of communication enable a rapid transfer of information, and the synthesised process for information to become knowledge, becomes the point at where “the magic happens in the spaces in between” (Gilbert, 2005). Why is this important? 21st century skills require a new priority of relationships that focus on creating ‘the spaces’. Gilbert states:

We have to repack the traditional goal of the education system, which is to build the intellectual capacity to think in ever more complex ways. It’s what Plato argued. It’s all about developing the individual and their thinking capacity. Our education system is meant to serve the collective good and create the kind of society we want to live in (Gilbert cited in Coleman, 2015, p. 1).

1.5 Rationale-So why now?

‘Entanglement’ describes Technology’s current influence and use of its tools, on education. Labelled Post-Humanism Theory, researchers have indicated ‘entanglement’, as the cause of “previous educational certainties, now being uncertain” (Barad, 2007). The importance of pedagogies like TaI can be justified by understanding circumstances that led to this change. Entanglement has emerged in response to exponential advances in technology. These rapid shifts from Industrial Age, to Knowledge Age, are forcing educators to re-think and adapt to this dynamic landscape.

The transformative nature of the 2007 NZC defined by visionary principles and values, with eight clear learning areas to support schools in curriculum design, has all the ingredients needed for educational reform. Schooling should “serve the collective good and create the kind of society we want to live in” (Gilbert cited in Coleman, 2015), and whilst recent advances in adopting new technological tools, and use of innovative learning environments (ILE’s-formally MLE’s) looks impressive, little around philosophy, practice, and pedagogical understandings have changed. Secondary school systems are still ‘sorting’ by age and ability, students for the same Industrial Age society the teachers experienced at school. However, careers continually shift, and working environments will be radically different when today’s students reach adulthood.

In a bid to address educational uncertainty, the Ministry of Education from 2015, introduced Investing in Educational Success (IES) initiative that ‘focuses on raising teaching quality to raise student achievement’. The theory suggests ‘collective capacity’; encouraging schools to form communities of around ten schools, enabling successful principals and teachers work beyond their school, to support nearby struggling schools or learning areas. In the introduction of this initiative, the Ministry of Education has acknowledged the need for whole system improvement, intending IES to strengthen teaching practice and education leadership, and agrees capability is not the issue; “we have some of the best teachers and leaders in the world” (Education, 2014a, p. 1). The proposal aims to build foundations for career pathways and strong incentives for collaboration and innovation. The 2014 cabinet paper describes how these changes will lead to measurable gains in learning and student achievement (Education, 2014a).

Compton & France (2012) use Identity Theory to describe the complex landscape of connecting communities of experts with students and discuss how profitable educational links are possible, through connections of discipline and verification of knowledge. Sociocultural and interpretive theoretical philosophies can be used to understand relationships between identity (self), structure (social) and agency (transformational), and the impact of these on teachers' experiences (Lasky, 2005). The challenge for TaI is to bridge the connection between individuals and systems supporting them. Perhaps the challenge for TaI is to become a 'theory that travels', one which like evolutionary theory, can adapt to changing environments over time, and what now may be needed are the circumstances (or conditions) for that to happen (Fullan, 2008).

Technology educators in the Greater Christchurch region could represent a unique opportunity to examine and understand how teachers and leaders experiencing exponential change across multiple specialist areas. The challenge of bringing about educational change has been around for many years, but is now strengthening and becoming clearer within the Technological context, as its body of knowledge is derived from authentic and dynamic economic industrial activity, current global events and innovation, rather than academic educational traditions.

1.6 Researcher Experience and Perspectives

The researcher's High School education was one of general disengagement and one where the majority of teachers treated her as a 'stereotype' rather than an individual. One teacher appeared as radically different. When taught by this teacher, the researcher recalls feeling important, and respected as a unique individual. This teacher constantly questioned how she was teaching, and

discussed these ideas with learners. She requested and valued feedback, sat *with* learners rather than *above*, and through her constant inquiry, identified and developed *each student's* unique passion, ability, and direction, discussing how it sat in relation to her own. The researcher's awareness and the subsequent impact of this, perhaps was due to a childhood surrounded by personalised, connected thinkers. The majority of immediate family adults were engineers, designers, farmers, constructed as multi-generational with strong influences from grandparents living in the house. This feeling of individuality and celebration of 'uniqueness' at home, was in contrary to the majority of her schooling.

Teaching in the UK only added to this childhood perception of a system that had forgotten to 'see' and respect the learner. New Zealand Curriculum with its suggested effective pedagogies, unique characteristics celebrating inclusion and diversity, was one reason the researcher's family chose to immigrate to New Zealand. During 2008, the researcher was a participant in Teacher Education 21 (TE21) research, through University of Canterbury. This provided clarity to 'felt but not understood, truths', enabling understanding of the shifting nature of knowledge in the 21st century. In 2009-10 the researcher was seconded to UC Education Plus (EdPlus- University of Canterbury's teacher support service) as a Technology Expert for the Year 7-10 curriculum, where travelling the South Island broadened her philosophical awareness. In 2012, the researcher was a participant in a Teaching and Learning Research Initiative (TLRI) pilot study with New Zealand Centre for Educational Research (NZCER) 'Future of Schooling: Aotearoa New Zealand' with Professor Jane Gilbert. This further informed understandings around educational systems, was a welcome opportunity renewing passions for learning. These uniquely New Zealand learning experiences motivated her to undertake this study.

1.7 Overview of Chapters

Following this introductory chapter, this thesis has four other chapters as outlined below.

Chapter 2 Literature Review

Chapter 3 Research Design

Chapter 4 Findings

Chapter 5 Discussion and Summary

Chapter 2 Literature Review

2.1 Introduction

The literature connected common themes surrounding the current phenomenon of TaI. The inclusion of this pedagogical model within the New Zealand Curriculum (2007) (Ministry of Education, 2007) is a unique and future focussed strategy. The positioning of Sociocultural Theory (SCT) provided the context of how people interact with each other and their surroundings using available tools. Collaboration literature describes how actions of change in schooling structure could influence its relationship to the community and national economy. ‘Change agent’ future-focussed thinking, offers solutions for what new types of relationships could enable cultural shifts in leadership, hierarchy, and teacher-learner relationships.

2.2 Sociocultural Theory (SCT)

TaI is a suggested model of practice, derived from research and described earlier as “not generally understood by teachers” (Sinnema & Aitken, 2011). This study sought to use SCT to focus on mediation of knowledge through culturally situated tools, to situate and underpin the ‘sense making’ by others:

What individuals believe, and how individuals think and act is always shaped by cultural, historical, and social structures that are reflected in mediational tools such as literature, art, media, language, technology, and numeracy systems (Wertsch et al., 1993); or more specific to school reform—in such things as policy mandates, curriculum guidelines, and state standards. These tools are products of social, cultural, and historical evolution, and continue to evolve as people use them (Vygotsky, 1962) in their everyday lived (cited in Lasky, 2005, p. 900).

Sociocultural Theory (SCT) supported TaI as a mediated tool via three powerful and contributory aspects connecting with educational practice:

- 1) Translating the implications of research findings in ways that are useful for teachers.
- 2) On the basis of sociocultural theory (SCT) that a theory-research-practice gap need not exist in the first place.
- 3) Explore the Teaching and Learning in classroom settings that supports the 'non-gap' position (Lantolf & Poehner, 2014).

Stetsenko and Vianna suggest Vygotsky's theory connects scientific knowledge with practical activity, as the two together “form inherent aspects (or dimensions) of one and the same process of people collaboratively engaging with their world” (Stetsenko & Vianna, 2009, p. 46). Ratner (2012) (p. 25) argued culture is not a variable factor to be correlated with psychology, nor is it an ‘add-on’ to psychology; it is the “impetus” for psychology. In other words, “culture produces the human mind” (cited in Lantolf & Poehner, 2014).

Vygotsky's sociocultural theory states two activities of theory and practice are inherently connected, ‘so that each is necessarily rooted in the other’ (cited in Lantolf & Poehner, 2014). This connection of theory supported the study in defining TaI as a tool of teacher activity situated within the socially constructed activity of learning and its associated relationships.

2.3 Teaching as Inquiry (TaI) or Individual Teacher Philosophy

The increasing economical need for all of our young people to be productive and contributing citizens has re-focussed attention on educational policy. The connection between a teacher's own philosophy and impact on student outcomes has created need for a model to enable a ‘self’ and systemic analysis of an individual teacher's influence on the learning of their students. To accompany the New Zealand Curriculum in 2007, the Iterative Best Evidence Synthesis (BES) Teacher Professional Learning, and Development (Timperley et al., 2007) supported

collaborative knowledge building and use across policy, research and practice in education.

Teaching as Inquiry is a way of being, to promote teacher-developing philosophies. Alton-Lee, chief education adviser for BES, confirms how important teacher learning is for those who require its support the most:

Teacher learning can dramatically influence student achievement, critical thinking, self-regulation, sense of identity, and ability to relate to each other and contribute to the community - in some cases the difference represents a year or more's progress when compared to business as usual. Most important of all, the findings show how dramatic differences can be made for students who have been traditionally underserved by education (Alton-Lee, 2007, p. xx).

The connection of teaching quality to economic success is not a uniquely New Zealand phenomenon. Alton-Lee (2007) cites Hanushek's (2005) policy brief for the International Academy of Education reports, and demonstrated this as an international challenge:

Government investments should focus on school quality because they have such powerful economic impacts (p. 9)... The most likely way to improve student performance is to improve the quality of teachers (p. 14) (Hanushek, 2005, pp. xxi, cited in Alton-Lee).

TaI is not about how teachers work with students, but rather "how they *think* about their work with students". It is "much more than occasional reflection into practice; the best teachers have always done this" (Robinson, Hohepa, & Lloyd, 2009). Rather, TaI is about *all* teachers inquiring continuously into how their actions and interventions affect students and their learning.

Robinson et. al., identified eight leadership dimensions that influence student outcomes. By far the highest impact is Dimension 4, 'promoting, and participating in teacher learning and development' and is twice that of any other dimension (Robinson et al., 2009). This indicator

strengthens the relationship of TaI as a philosophy to generate positive learner outcomes, and is further explored within the earlier BES document Teaching Professional Learning and Development (Timperley et al., 2007). Complex understandings are unpacked in the ‘black box’ associated with teacher learning, suggesting the kinds of change, which can enhance student achievement.

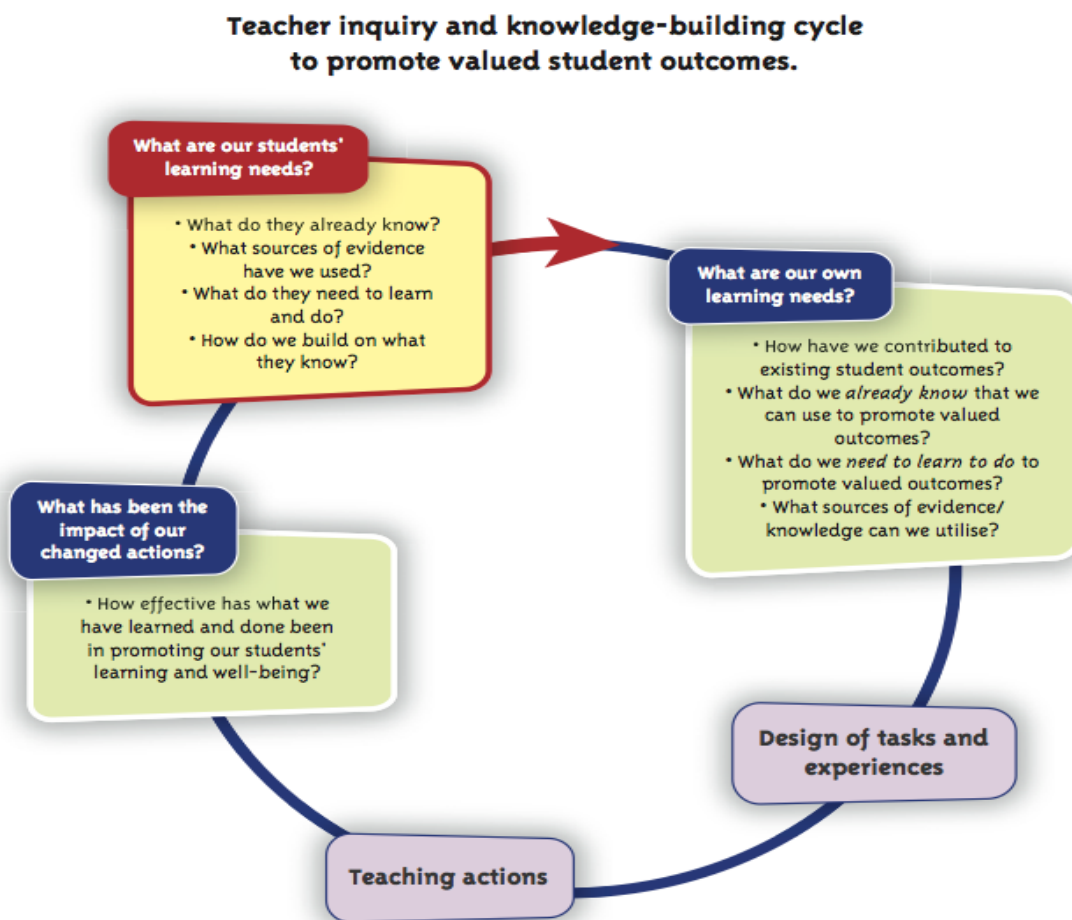


Figure 2: Best Evidence Synthesis TAI Model (Timperley et al., 2007)

The TaI diagram (Fig. 2) above, describes processes around desired teacher professional activity. Developed TaI philosophies could enable understandings about how ‘black-box’ or unseen

thinking could be applied to existing policy and systems. This diagram differs from the NZC TaI Model (Fig. 1.1) as it is refined to focus solely on adult learners without inclusion of student learners.

2.4 Barriers for TaI philosophy?

The NZC (2007) had a strong intent, prescribing a learning environment that celebrated and welcomed diversity of individuals and groups. Sinnema and Aitken (2011), described this unique quality as “school-based curricula become more responsive to priorities for teaching and learning in the particular context, and less focused on coverage of a prescribed sequence of teaching and learning” (Sinnema & Aitken, 2011, p. 29). This statement signified a crucial priority, permission, and desire from Ministry of Education enabling teaching and learning to become context responsive and reflexive. The desired responsivity required teachers, initiators of the teaching and learning experience, to be instigators of reflexive actions.

In achieving TaI implementation, Sinnema and Aitken indicate three areas of ‘gaps’. Three key issues in the implementation of teaching as inquiry – **confusion** with inquiry learning, **absence of engagement** with evidence, and **limited progress** in implementing teaching as inquiry (Sinnema & Aitken, 2011, p. 2) Clarke (1994) suggested two ways of dealing with these ‘gaps’:

Teachers engage in “small actions that resist the advice of experts” except on their own terms in order to “solve problems of direct interest” to their practice. The second was to “invert the assumed researcher/practitioner hierarchy whereby teachers are on top with the experts and administrators below and in their service” (cited in Lantolf & Poehner, 2014, p. 18).

Teaching philosophies are increasingly required to be more dynamic, and inter-connected across communities, within and across schools to meet rapidly changing environmental and economic needs, ‘making the scholarship of teaching public, accessible to critique by others, and exchangeable in the professional community’ (Cochran-Smith & Donnell, 2006). The following example illustrates how flexible and responsive teacher philosophy could now be required to be.

In May 2015, Heffernan explained a scientific experiment using chickens and their capacity to lay, as a productivity exercise during a TED Talk. Over three generations, the best layers were selectively bred from, producing ‘super chickens’. At the third generation, the super chickens were all but a few, dead. Due to competition, they had pecked each other to death. The chicken ‘stars’ that had not been selectively bred, were content, and production levels sustainably increased. Heffernan suggested the use of ‘stars’ thinking generated policies, within organisations damaged collaborative culture.

Today’s big problems demand that everyone is needed for their energy, enthusiasm, motivation, ideas, talents and attention, if we are to increase human capacity. If organisations build social capital this way, they need to realise it is the trust and interdependency that is important (Heffernan, 2015). This exemplified the nature and meaning of TaI; inclusivity, equality, each participant is valued for contribution, and now, each learner matters.

2.4.1 Collaboration

Trustworthiness modelled by leaders, is essential to collaboration existing and continuing. In ‘the quest for improving the conditions for learning’, France & Compton (2012) suggested reasons for connecting through the question “why bother?” In attempting to answer this question, they examined the drive both internationally and in New Zealand to make leading and learning more connected. Interestingly, and potentially useful in understanding why TaI has not been better adopted, France and Compton clarify the connection between identity theory and learning to inquire. Wolcott, (1991), Lemke (2001), Gee, (2000) and Aitkenhead (2001) discussed the phenomenon of learning as ‘culture acquisition’. This suggested learning is not a simple process of understanding new material, but there were social and cultural identity-linked decisions the learner made when deciding whether or not, to take part. When making decisions, it is suggested that identity is linked to subjective observations, “Any gaze is always filtered through the philosophies of language, gender, social class, race, and ethnicity. There were no objective observations, only observations situated in the worlds of the observer and the observed” (Denzin & Lincoln, 1994, p. 17). This hinted at the significant role of social and cultural-identity within the task of philosophical development.

Deciding to participate signals acceptance of a community or culture that may contrast in belief, values, ways of interacting, and being, to their own. Therefore, if initiatives aiming for connectivity adopt Sociocultural Theories, which view learning as participation using culturally accepted tools, this then enables learners to decide to transition into that ‘new world’. Identity Theory suggested that people have multiple identities dependent upon who they are interacting

with; family, friends, sport/recreation, work colleagues. As they shift identity according to the group they reside, the individual aligns to shared cultures and positively contributes to group affinity. Language use and specialist literacy is key to co-construction of meaning, discussion across groups, enabling transferability between groups.

Acts of collaboration gain strength from contributor's collective power. Collective cognitive ability of a group will always be considerably greater than the sum of its parts. This is because an individual can only assimilate beliefs and views of self, within its immediate environment. In this case, these "differences within collaboration offers cultures a wealth of rich resources" (DuFour & Fullan, 2013), if these differences are viewed as a positive contribution and are inclusive of all members.

2.5 Tal connections with the New Zealand Curriculum

TaI has strong allies within the component parts of the NZC. As a suggested pedagogical system, it contains and promotes the actions contained in NZC values and principles. The embodiment of external value and principles is not possible until these actions become embedded within personal attitudes. "In order to teach you I must know you" (Delpit, 2001, p. 211). The purpose of TaI is to enable this embodiment of 'knowing' within the personal attitudes of the teacher, perhaps Culturally Responsive Pedagogies provide ideal visible indicators:

O tu, aganu'u, ma agaifanua a le tamaititi o le a le mafai ona ulufale atu I le potuaoga sei vagana ua fa'atauaina ma faaulufaleina muamua I le loto ma le agaga o le faiaoga. (The culture of the child cannot enter the classroom until it has first entered the consciousness of the teacher) (P. Allen, Tufulasi Taleni, & Robertson, 2008).

The front half of the NZC contains comprehensive attributes for socially constructed desirable thinking and ways of being, and is deliberate in multiple connections to importance of culture.

Sinnema and Aitken have already stated that significant changes in the content of learning areas, had resulted in a content focus, rather than broad, consistent embedding of the NZC in its entirety, indicating a lack of attention to the culturally responsive front half (Sinnema & Aitken, 2011).

NZC principle ‘Learning to Learn’ is one of eight described collectively as, “principles relate to how curriculum is formalised in a school; they are particularly relevant to processes of planning, prioritising, and review” (Ministry of Education, 2007). ‘Learning to Learn’ principle directed at student learners is explored due to its relationship in nature to TaI. The intent of TaI is for teachers to inquire into their own actions and the results of those actions on learning. This activity is counter to the traditional role of teachers being the ‘holder of all knowledge’ and represents a significant threat to those of the ‘old-construct’ mind-set. Hipkins argues if teachers have no experience of pedagogical sense or meaning making, without intervention, there is little hope this will happen:

Learning to learn has subject-specific dimensions when it is framed in these disciplinary terms, but these are relatively unfamiliar pedagogical ideas for many teachers, whose own education probably did not include an explicit focus on the ‘nature’ of different disciplines and their meaning-making practices (Hipkins, 2015, p. 6).

The newly released paper ‘Learning to Learn’ is in a secondary setting. This setting was selected as strong disciplinary natures and focus on ‘high-stakes’ assessment, appears to be counterproductive to the adoption of Learning to Learn strategies and can be perceived as a threat to ‘new construct’ beliefs:

.....suggestions that strong traditional practice is no longer sufficient to meet students' needs may be experienced as deeply unsettling. This could help explain a reluctance to change current practice in the senior secondary school when high-stakes assessments continue to focus on more traditional learning goals (Hipkins, 2015, p. 49).

Ironically, TaI is suggested as an effective strategy to support improved learning outcomes, and move practice away from traditional hierarchical divisive knowledge environments. This highlights assessment practicalities for secondary teachers, and presents a direct threat for TaI.

2.6 Change Agents-Needs for the 21st Century

The ramifications of a shifting knowledge discourse, has seen 21st century pedagogies develop, and a concurrent attempt to define the facilitating environment. As educational focus now shifts to one of relational depth and understanding in order to raise achievement and reduce disparity in preparing students for the future (whatever that might be), the need is now for all educators to become leading learners, to side aside as 'unknowing' learners, to embrace uncertainty. The 'change agent' and 'professional learning culture' (PLC) literature has risen to the challenge of what new pedagogy and its environment could look like. The agency of the learner relationship is not now limited to teachers and students. Many leadership roles too have adapted to sit aside teachers as learners, rejecting the constraints of hierarchical influence on collaboration.

In response to shifting roles, modern pedagogies should align, being responsive to new technological needs:

The digital revolution is transforming our work, our organisations, and our daily lives. Driverless cars are now legal in three American states. One third of payments

in Kenya are made via mobile phones. Wearable computing will soon mean that your jacket will monitor your heart rate (should you want it to). I have seen a violin - played beautifully - that was 3D printed. This revolution is already in homes across the developed world and increasingly in the developing world too. Moreover, there, it is transforming the way children and young people play, access information, communicate with each other, and learn; but, so far, this revolution has not transformed most schools or most teaching and learning in classrooms (Barber cited in Fullan & Langworthy, 2014, p. 7).

Technological impacts have resulted in radical changes in learner needs, which has transformed the learner into an ‘unknown alien’. Massachusetts Institute of Technology (MIT) conducted research on high school student’s brains, which showed that their brains were less active during a traditional lecture, than when they were asleep (Fullan & Langworthy, 2014). In response to learner boredom, disengagement, and teacher career disillusionment new pedagogies are urgently needed. The response to these concerns has seen an initiative overload, adding to workload demands has exacerbated the situation further. Fullan (2014) argues only when, systems change knowledge, pedagogy, and technology, are thought about in an integrated way, can technology make dramatic differences to outcomes. This holistic approach encompasses the teacher as change agent, within a culture of collaboration and integrated ‘systemness’.

Fullan and DuFour (2013) describe the professional learning culture in which depth of integration can be achieved. They describe cultures of relationships, ways in which leaders implement policy and drive forward change has a delicate balance of ‘loose-tight’ directives and suggests potential influences if balance is not achieved. They suggest solutions for administrative support in the task of data collection and analysis, and new schedules for cyclic review and reporting compliance (DuFour & Fullan, 2013).

Fullan (2013), Langworthy (2014), and Gilbert (2015), have made clear arguments for the shifting nature of employment markets, one that policy makers and teachers must understand if they are to prepare students for adult life. As many entry and service roles become automated, “within the next five years, our priority learners will have to face the prospect of not being employable” (Gilbert cited in Coleman, 2015). This influences wider availability of future career

prospects, and requires students to be highly competitive, self-creative individuals, if they wish to experience rewarding careers (Fullan & Langworthy, 2014) and experience life as a “confident, connected, actively involved, lifelong learner” (Curriculum Vision, Ministry of Education, 2007, p. 8). The economic ramifications of this are clear; if educational reform is to be socially beneficial, it has to be intentionally constructed, rather than ineffectively repaired.

2.7 Developing Leaders for a Complex World

If every learner now matters, and we are to believe the NZC that TaI is a successful philosophical and change agent tool, this suggests individual teacher capacity is now the focus:

When the task is clear, well defined, and easy to evaluate, a person’s competence is clear - and so is the need for training or support. When the task is complex and unbounded, and the evaluation difficult or impossible to connect easily, it is much harder to determine competence (Garvey-Berger, 2012).

Constructive Development Theories focus on individual meaning making, rather than progression in age or phase of life. Constructive - as they are concerned with the ‘way’ each person creates their life by living it, Developmental - as they are concerned with the way construction changes over time to become complex and multi-faceted. Kegan (1994) states the modern world is becoming increasingly too complex for adults to be able to grow without intervention and support:

The expectations upon us...demand something more than mere behavior, the acquisition of specific skills, or the mastery of particular knowledge. They make demands on our minds, on *how* we know, on the complexity of our consciousness (Kegan, 1994, p. 5)(Cited in Garvey-Berger, 2006).

Adult Constructive Development, journeys through four identified areas. ‘Self-Sovereign mind’ is the first. Characteristics or general attributes of this emerging stage of development is the individual cannot take on perspectives of others, they have no orientation to their own inner psychological world (or anyone else’s), they have no understanding of subtleties of human

interaction. They voice clear answers to complex issues like abortion/suicide, and perhaps of most concern, a high percentage of prison population are of this mind. So how does the individual with this mind, grow, and develop further? They need intervention, help and support in order that they learn to understand and internalise, perspectives of others. Gradual growth comes from understanding connections between self and others and this is only accessed through constructed experiences (Garvey-Berger, 2012, p. 31).

Moving from Self-Sovereign to Socialised mind is characterised by awareness growth of outside theories and perspectives. The ability to act from inside those perspectives and theories. Simple ‘right-wrong’ becomes too complex, and individual begins to identify with larger groups or ideas that hold and explain that complexity. This inability to make decisions within herself characterises the socialised mind, and explained why this used to be the desirable mind of adults during the Industrial Age.

The move from socialised to self-authored mind is characterised by the ‘bumping’ against her own voice and that of others. She may feel selfish at putting her own needs first, but as conflict becomes more comfortable to the more self-authored mind, they question others’ actions...the self-authored mind tries to avoid those with a socialised mind, which is futile as it makes up the largest percentage of the population. “The socialised mind is alive and well in the executive ranks, and assuming otherwise will only lead to frustration and unhappiness” (Garvey-Berger, 2012, p. 63).

Self-authored mind is the one that is familiar to us; it exemplifies what adults *should* be like.

Self-authored minds do not need or welcome people to tell them how to make sense of their world. Strengths of the self-authored mind are many. They consist of a clear sense of personal mission with the ability to hold onto many perspectives. He makes informed decisions taking competing perspectives into account whilst still driven by own mission or values, he has distance from own emotions (instead of 'she makes me angry', they say 'I wonder what it is about her that makes me angry') so are less likely to be caught up in them.

Self-transforming minds begin to look at systems that unite us as humans or as members of a fragile planet. Strengths of the self-transforming (or post-modern mind) are clearly defined and has the ability to see connections everywhere. They look at issues from multiple perspectives, and sees ways that perspectives overlap. This form of mind is so rare that self-transforming minds do not have many peers to make meaning with in, and ideas may feel confusing or wrong due to isolation. The self-transforming mind is constantly working to grow and learn as if this is the source of energy for life. They constantly question own assumptions and have a clear understanding that the world is a constant source of growth. Sadly, many people with this form of mind find organisations too constraining and leave, when the qualities of mind they possess are exactly what the organisation need. To sum up, the stages of constructive development contain the following voices and perspectives.

- Self-sovereign - own
- Socialised - meets rules and expectations laid down by society
- Self-authored - others voices considered
- Self-transforming - own & others equally and objectively

2.8 Socially Constructed Decision-Making

A common barrier to TaI identified by Sinnema & Aitken (2011) is assimilation to just another initiative, sometimes referred to as ‘initiative fatigue’. This indicated a lack of understanding on the potential impact of pedagogy and the failure to have strategies which enable an informed and robust, decision-making processes. Attempting to uncover what contributed to socially shared cognition in small decision-making groups, Hastie and Pennington (1991) analysed the construction of criminal juries and offered solutions to how socially shared cognition can be observed and measured (Hastie & Pennington, 1991). They offered methods to describe the structure of shared beliefs about information and ways members of groups agree on cognitive conceptions.

2.9 Research Aim

This study examined the connections and relationships between TaI as professional responsibility of every teacher, and the impact of Identity Theory in generating teacher philosophy. This study explored how the curricula, systems and structures, events and culture of New Zealand education, specifically supported... or not, secondary Technology teachers in Greater Christchurch, in the attainment of that goal for the benefit of all learners and wider society.

2.10 Research Question

“What are the *facilitating conditions* that support Teaching as Inquiry (TaI) for Secondary Technology Teachers who are Middle Leaders in Greater Christchurch?”

2.10.1 Sub-questions

1. What is the impact on **teacher philosophy**, by teachers who use TaI strategies?
2. How does school management and **school culture** influence teachers as they conduct TaI?
3. What are the influences of **wider policy** on teachers engaging in TaI?

Chapter 3 Research Design

3.1 Introduction

Qualitative, and Interpretive methodologies, with Sociocultural Theory, allowed a focus on the ways teacher's social structures interact with cultural tools available, within individuals and the environment. Interpretive analysis enabled understanding how individuals used pedagogical tools to shape cognitive functioning, and make sense of the dilemmas presented in decision-making. This supported the analysis of TaI tools, and informed how individuals constructed and interpreted meaning for actions and relationships, thereby understanding tool interactions.

3.2 Qualitative Research

Qualitative research is a relatively new term, first used in the social sciences in the 1960's. It described research strategies of data collection that described peoples' 'lived experiences' directly connected to the person, their unique environment, and perspective. In contrast, quantitative methods use statistical data and are separate from the person. Bogdan and Biklen (1998) described qualitative methods as, "rich in description of people, places, and conversations not easily handled by statistical procedures" and "they are formulated to investigate topics in all their complexity, in context" (p. 2).

This study utilised qualitative methodologies as they provided an inductive logic which allowed for key ideas, or theories, to come from the data; the theory is grounded in the data (Mutch,

2005, p. 20). Qualitative methodologies provided the ideal framework to be able to answer the complex what, how and why questions around individual teacher philosophies.

3.3 Interpretive Approach

Interpretive research gained insight into how a person made meaning within the situation of a phenomenon. It is socially constructed and data collection methods centred on interviews, discussions, and observations. Interpretivist study involved the researcher interpreting elements of the study thereby integrating human interest. An interpretive approach to research is intentional in its aim to improve situations for people involved, attempts to support and nurture environments for positive change, not just continue with the ‘same-old, same-old’. It is specific in its focus when attempting to understand and rationalise contexts of the phenomenon. It strived for multiple perspectives surrounding events and intended to be seamless and fluid during the process of scrutiny (Cohen, Manion, & Morrison, 2007). Interpretive paradigm wished to be specific and is intentionally ignorant of elements that sat outside the scope of attention. It did not want to be generalisable, and it was hoped the study could be transferrable to other contexts that have benefitted from its conclusions.

3.4 Ethical Considerations

Ethical considerations are vital in any study as the researcher is in a position of power over the participants. Ethics related to ‘codes of conduct’, a set of “guiding principles to protect the safety, rights and mana¹ of participants” (Mutch, 2005, p. 79).

¹ Māori term for personal honour, power, control, dignity, strength, courage, integrity, position in community.

The study gained ethical approval from ERHEC (Educational Research Human Ethics Committee) at the University of Canterbury. Participant consent was informed via an open, honest, and transparent process clearly communicated at the beginning, and throughout the process. This consisted of consent letters from participants, courtesy letters to principals, voice recorded data and transcripts contained securely on a personal hard drive and laptop protected by passwords.

Participants had multiple opportunities provided for by member checking of transcripts by regular communication, feedback, amendments, additions, and deletion, of any part of participant data. In relation to the study process, ethical principles were followed throughout, by ensuring confidentiality of participants by use of pseudonyms, and non-disclosure of specific details and locations. Bogdan and Biklen stated, “If you treat people like research subjects, they will act like research subjects” (1998). This justified the researcher-participant relationship goal as one of value and respect, aimed to realise the *Āko* principles (Māori term for respect), and aimed for study outcomes to serve both participant, researcher, the integrity of study activity itself and wider community interests. Greater Christchurch network of Technology teachers is a ‘small, connected community’ and the highly collaborative nature of this network increased the attention to ethical principles to maintain the well-being and confidentiality of the participants.

3.5 Methods

This study employed semi-structured interviews to gather data around information surrounding practice, attitudes, and decision-making strategies that enables generation of teacher philosophy.

Findings were analysed and results informed the construction of conditions that facilitate Teaching as Inquiry (TAI).

3.5.1 Interviews

Kvale (1996) defined qualitative interviews, ‘a construction site of knowledge’. Interview is an ‘inter’ ‘view’, an interchange of views between two people conversing on a mutually interesting theme. It required interviewers to establish relationships with interview participants. Three main types of interview; Structured – follow a set of prescribed questions, Semi-structured – have a set of key questions follow in an open-ended manner, and Unstructured – begin with a single open-ended question or a broad theme; respondent determined direction.

3.5.2 Semi-structured interviews

Semi-structured interviews were used as the researcher knows the participants as colleagues, and depth of discussion is more likely achieved. In this type of qualitative study, trust and respect between researcher and participants was high and relationships empathetic and supportive. Semi-structured interviews used sets of key questions to inspire and encourage open-ended responses through ‘why/how’ structure, e.g. required participants to reflect and analyse. Semi-structured enabled focus, and provided opportunity for realisations, deep reflection, and possible questioning of personal beliefs and views (Kvale, 1999).

3.6 Participants

In this study, the researcher already had either existing relationships with the selected participants, as colleagues within the same school, or Greater Christchurch network

relationships. Tom and Alex are current or recently retired employees at a high school and are referred to as ‘the high school participants’. Robyn and Tane are two Year 7 and 8 teachers based at a Technology Centre located on the same site as a full primary school, and are referred to as ‘the intermediate participants’. This was an attempt to ‘bridge’ the intermediate and high school sectors secondary transition, provided useful theoretical and practical insights to achieve a broad picture of inclusive Year 7 to 13 secondary practice. The fifth participant, the expert, is a national secondary subject expert based in Christchurch, providing a broad ‘umbrella’ perspective to the data, and is referred to as ‘the expert participant’.

Another strength of using participants, with whom there is an existing relationship, is one of trust. The negative side to using known participants is the potential to overlook important aspects, which would otherwise be covered as part of familiarisation (Whiteley & Whiteley, 2006). This was avoided by careful design of interview questions employed in ensuring a broad data spread. Participants represent a national New Zealand perspective, and two main regions of Greater Christchurch: Central Christchurch, and the Waimakariri. Specific participant details are listed in Table 1.

Table 1: Participant Details

Pseudonym	Gender	Age	Ethnicity	Year Levels Taught at	Years Teaching Experience	Trained	Current Role
Tom	Male	65	NZ/Euro	Yr 9-13	25	Secondary	Retired, ex-Head Of Dept.
Alex	Male	68	NZ/Euro	Year 9-13	48	Primary	Head of Learning Area
Robyn	Female	60's	NZ/Euro	Intermediate	40+	Secondary	Head of Dept.
Tane	Female	50's	NZ/Euro	Intermediate	30+	Primary	Head of Dept.
Luke	Male	56	NZ/Euro	Year 7-13	35	Secondary	National Expert Secondary Student Achievement,

3.7 Purposeful Selection

The five participants were purposely selected to capture, as far as possible in a small study, the ‘heterogeneity of the conclusions’ (Creswell 2002). This meant the participants represented the most important possible variations of demonstrating positive TaI philosophies, known to the researcher within the region, rather than the typical or average range available (cited in Maxwell, 2012, p. 98). Participants were also selected as extreme representatives of an older age range of teacher social groups, generally regarded as being *less* capable of shifting professional practice, in order that specific patterns of attributes be identified. Finally, participants were selected with whom the most productive relationships could be established, sometimes called ‘convenience sampling’, that would best answer the research question (Maxwell, 2012, p. 99). In this case, using exemplary teachers with a combined service length of almost two centuries was appropriate in ascertaining personal philosophies effective for this model of pedagogy.

3.8 Trustworthiness

This study was designed intentionally to demonstrate trustworthiness. Rigor in the scientific, conventional sense was achieved through the ‘truth value’ or internal validity of the participant’s personal inquiry. External validity or application was tested by comparison of data to official TaI descriptions, for reliability and objectivity, achieved through asking the same questions to all participants and deliberate separation of data voice from researcher voice to enable effective synthesis (Schwandt, Lincoln, & Guba, 2007).

Rigor in the naturalistic sense was also considered. The nature of reality to an individual was not based on a single event or inquiry, but multiple realities that were socially constructed. These were not judged as separate pieces of data, as they influenced and interrelated to each other. These can only be studied holistically (Schwandt et al., 2007, p. 17) and were achieved concurrently through careful attention to methods of data collection, coding, analysis, and reporting. The combination of individual perspectives of teachers undertaking TaI activity, understanding potential enablers and barriers in pursuit of TaI, compared to the ‘lived reality’ of experienced educators, ensured that the study measured, what it set out to measure. Therefore, the resulting analysis from this considered process is valid and supported the goal of thesis in drawing to a quality conclusion by providing a set of facilitating conditions for TaI.

Research design aimed to be robust, so it could be carried out elsewhere, and transferrable in nature rather than generalisable was an ideal outcome. The researcher attempting an objective ‘fly on the wall’ approach enabled independent study outcomes, continuously looking for patterns when transcribing by comparing and contrasting data. Thematic analysis grouped together patterns, assigned labels, and sequences when ordering was appropriate. Establishing

links and relationships within data, literature, and everyday practice resulted in speculation as to the emerging hypothesis, and steps for further research. These steps resulted in a logical and organised approach to the task of qualitative data analysis, and sat comfortably within this context.

3.8.1 Data Analysis

Data analysis in qualitative research is more personalised in comparison to quantitative research as it accounts for emotional perspectives. During the process of gathering qualitative data, the researcher is perceptive to the kinds of responses that can potentially answer the question, thereby enabling the robust, naturalistic process designed for (Woods & Pollard, 1988).

3.8.2 Triangulation

Credibility was achieved by triangulation of perspective. The researcher was interested in how the data resonated between the philosophies of multiple people, in different environments, attempting to achieve the same aims (T. D. Allen & Eby, 2007). Asking the same questions of multiple participants, allowed for direct comparison across sectors and institutions. In addition to the secondary teachers, a New Zealand wide, specialist Technology expert provided additional triangulation through providing data situated in nationwide locations.

3.9 Coding

In this study, teacher responses from interviews were transcribed verbatim, from voice recordings, by the researcher. Individual transcriptions were read, read, and re-read again, categorised, and coded into themes. Significant revelation moments, and shifts in thinking were

paid attention to, and provided the human emotional element of participant voice. These emphasised aspects were transcribed in bold font, and aspects with emphasised significant meaning, placed in italics after being noted as such, to retain emotive responses. During the transcribing process, a new paragraph was started each time a new theme presented itself. This structural design facilitated the coding process (Bogdan & Biklen, 2007). The raw data used thematic analysis to take its themes from the data itself as the analysed data from participants compared with the expected official definition and visible framework of TaI. This exposed the current strengths and limitations of TaI practice.

Assigning codes to the data was initially intrinsic and straightforward. The conversations derived from real experience and events. The ‘reflection space’ planned for between the first and second interviews provided rich data. Expected was a significantly deeper level of conversation and response after the first interview, and unexpected was the obvious nerves and apprehension from participants, who provided the researcher with a ‘glance through their eyes’.

Many themes emerged as the interviews were transcribed. A process of colour coding was used through the word processing software, to highlight each theme and generate new ones. The researcher expected to be automatically very familiar with the data, as she is currently employed as a middle leader, living what she perceived to be the same experiences. This was not the case as the interview process unearthed a broader insight into a range of many different experiences within each individual, however, and interestingly, causes appeared to generate from common

sources. This provided many connections locally, with some unanticipated aspects emerging from the national perspective.

There were many internal and external influences around complex aspects of leadership. More themes emerged than were expected, and the researcher quickly became aware of the complexity of how these were related, inter-related, and inter-dependent. Content of the emerged themes were clear in content, but sub-themes were large in number and inter-related. This complexity required rationalising during collection, and to make sense of what was emerging, numerous versions of visual representations of relationships were produced (refer Fig. 8. pp. 160). The complex relationships required simplifying whilst retaining detail, and the ability to be communicated to the reader. What were whole themes, with sub-themes of their own, were re-positioned under much broader themes of the *location* of the activity. This was a significant moment (and one of great relief) as the fewer, broader themes that focussed on the location of the activity, aligned perfectly to the TaI model of inquiry. When re-positioned under three TaI broad themes, sub-themes enabled a more defined and understandable view of the data.

The three themes:

1. Focussing Inquiry - around the location of 'Self'
2. Teaching Inquiry - around the location of 'Social'
3. Learning Inquiry - around the location of 'Transformational' (adapted from TaI model, Ministry of Education, 2007, p. 35)

Realignment of data, forming three broad themes and positioning twelve themes into sub-themes under these headings, enabled results to be easily compartmentalised and prepared for analysis.

In conclusion, the collection, transcribing, and coding of data, resulted in a journey of many unexpected twists. The decision to select participants based on previous collaborative relationships produced the depth and quality of data desired.

Chapter 4 Findings

4.1 Introduction

Three broad themes around locations of change emerged from participant data. Self, Social and Transformational, the broad themes described understandings from participant perspectives, the positioning of contexts and how they related to others, to effect required philosophies. ‘Self’, located only within the individual, ‘Social’, located how the self interacts within societal environments such as departmental colleagues, networks, and clusters, and ‘Transformational’, located how the wider supporting location of policy directives from national bodies such as government, unions, subject associations, facilitated individual philosophy.

The theme ‘Self’, centred on perceptions of individuals. Sub-themes became evident as aspects of individual views. The basis for perceptions appeared to focus on individual attitudes and reflections and contained information around professional and personal history. The ways the individual responded to diverse learner needs, indicated acceptance and understanding of culturally responsive pedagogies and acknowledged needs for constant changes in practice. The emergence of culturally responsive pedagogies was one of the later aspects to be understood within the location of ‘Self’, and was emphasised by all participants as the first to be noticed, and the aspect of most importance, if absent during ‘Social’ settings.

The second theme, 'Social', focussed on individual perceptions of social interaction, and described how individual qualities transform when combined into a group. Whilst this theme had the same generic content in common with the 'Self', the nature of sub-themes remained apart from Culturally Responsive Pedagogy-CRP. Interestingly, CRP changed significantly when located in the 'Self' as the nature appeared to develop differently due to the quality and quantity of collective attitudes and reflections. This highlighted as a significant and desired contribution to wider understandings when located in a 'Social' setting.

The third theme 'Transformational', focussed on individual participant perceptions of influences to practice in wider locations responsible for direction, policy and support of positive learning outcomes. This includes assessment authorities (New Zealand Qualifications Authority-NZQA), teaching unions, Ministry of Education, Boards of Trustees, community, Iwi, and businesses. Table 2 contains the themes and related sub-themes, and the following section outlines each theme and the sub-themes associated with them in further detail.

Table 2: Findings Themes and Sub-Themes

Theme	Sub-Theme
Self	Change/shift
	Attitudes
	Reflections
	Culturally Responsive Pedagogies (CRP)
	Collaboration
	Decision Making
	Flexible Perspectives
	Professional Learning & Development (PL&D)
Social	Culturally Responsive Pedagogies (CRP)
	Decision Making
	Attitudes
	Reflections
	Professional Learning & Development (PL&D)
	Collaboration
	Flexible Perspectives
	Change/Shift
Transformational	Vision
	Compliance
	Modes of Capture
	Assessment
	Change/Shift

The remaining sections of this chapter are organised around the identified themes and subthemes.

4.2 Self

Within the ‘Self’ theme, two influential sub-themes emerged. Attitudes appeared as the foundation and source of ‘self-knowing’. These were informed by sub-theme ‘reflection’, which appeared to enable individual attitudes to continually develop and grow. Data suggested how

attitudes consisted of beliefs, values, desires, standards, perceived as personal expectations, and those set by society around us. Data suggested quality reflections were required for attitudes to become a positive and secure aspect of the individual. The data also appeared to support a direct connection of these two initial sub-themes, as vital components to the generation of individual culturally responsive pedagogy (CRP).

The expert, to explain the nature of knowledge in the ‘new construct’, suggested an organic analogy of plant growth. This described how an individual’s development required the correct addition of quality and quantities of ‘nutrients’ at crucial stages. This need changed when in a social setting, to a group requiring a broadly applied external ‘fertiliser’ to enable growth to continue. When the social setting increased to a national scale, the potential transformative growth was compared to a plant ‘flourishing’.

4.2.1 Attitudes

The data suggested participant attitudes, had the greatest influence on practice. This focussed on identifying what each participant perceived as their beliefs and values, and used feedback of the impact of these on those around them, to inform further development. Attitudes explained aspects of participant’s professional life and most provided details of early personal experiences. All attitudes described, focussed on what teachers regarded to be important regarding external relationships, with learners, colleagues and senior leaders, and centred on their perceived ability to affect the environment around them. All participants spoke of a depth of knowing own attitudes. They spoke of this understanding as appreciating honesty, integrity, empathy, work ethic, openness, complete fairness, a desire through modelling, to describing how they teach

awareness of ‘own attitudes’ to children. They spoke of ‘self-knowing’ providing clarity to actions and decisions.

Secondary teachers discussed attitudes towards awareness of what the employer needs and included transition and pathways pedagogies in relationships with learners. When conflict within the classroom arose, one participant explained “that’s **not** the ethic in here, and it’s not what the ‘boss’ will want either”. Intermediate teachers mirrored this pedagogical attitude but instead of relating it to employment, directed as consideration of others’ needs within the technological process via stakeholder feedback and sustained involvement throughout the design process. Participants described how they valued attitudes, that self-knowing enables empathy in their relationships with learners and how this in turn generates collaborative working relationships. Data stated clearly that all participants exhibited a cyclic, growth approach to teaching and leadership roles.

4.2.2 Reflections

Closely linked to attitudes, the reflections sub-theme explained how attitudes then developed through reflection. Data demonstrated how the quality of attitudes, was inter-reliant on the quality and subsequent reflection, by the indication of improvements or revisions taking place after the act of reflection was completed. Findings on reflective thought explained how the activity of reflection enabled considered and continual development of individual attitudes. The expert states the core purpose of Teaching as Inquiry (TaI) is for teachers to “**stop** and think about **who** they are” emphasising how vital the activity of reflection is to this pedagogical model and resulting teacher philosophy.

Participants described how they were ‘informal reflectors’ constantly evaluating performances of themselves and others according to ‘standards’ criteria. Reflections from intermediate teachers focussed on how reflection enabled positive attitudes towards learning, and consequently influencing student’s attitudes. All agreed energy, passion, and enthusiasm were crucial in their quest to inspire students. Alex described weekly sessions involving senior classes, discussions informed all learners how effective the previous weeks learning was. Teachers encouraged students to develop a consistent ‘voice’ to support direction of learning, by asking what they think went well, also importantly, for the teacher. He stated that reflections did not include students past mistakes, using the phrase, “keep moving forward”.

The Technological Process was described by all teacher participants using a range of strategies as a reflective tool, for ‘stakeholder’ input as both a starting point for determining the ‘need’ and as a progression tool for continuing development of an outcome. Data suggested deliberate use of these tools informed and supported a developing learner awareness of own attitudes. These reflections contained strong elements of collaboration as participants continually described use of tools with a ‘we’ description, communicating a process completed together. A useful vignette, Tom discussed how reflection played a crucial role in his relationship with a student. His modelled reflections and related activities enabled a Year 9 student to reflect during a short 10-week Robotics course. The influence of this relationship endured the next four years of her schooling during which the teacher and student did not meet again. On her leaving as a Year 13 student, Tom was gifted some homemade goods and a note, thanking him for his support for that student

who felt he ‘enabled her to **know herself**’, thanking him for the support to make what she viewed as the correct decision to enter a university course of mechatronics. Tom described this as a very humbling and immensely rewarding experience.

The expert, corroborated teacher participant’s views that reflection has to be an intrinsic part of the professional learning and development (PL&D) growth process for it to become meaningful. “Whether that I’ve **thought** about it, written up a paper, and **done** something with it... yes something, so that I understand **what it is** that I’ve just done, rather than just going out for the day and having lunch”.

All participants shared viewpoints that PL&D had to be intrinsic and planned; to be valued by recipients that all PL&D should be subject to on-going evaluation and reflection via participant voice, and subsequently fed back to colleagues at school. The expert explained this as a barrier in the national utilisation of PL&D as, “Unless I understand the value of it in my life, I disregard it, and say it doesn’t exist”. Reflection Luke suggested, offers a solution to this ‘passive participation’ in PL&D as a tool to refocus the value of the advice to teacher’s own contexts within TaI and potentially further qualifications. In this way, data showed how reflection enabled PL&D experiences to be meaningful and provided intervention to the current teacher delivery methods.

4.2.3 Culturally Responsive Pedagogy (CRP)

This sub-theme contained data around how participants perceived their understandings and how they contributed to CRP in social interactions. Perceptions were inclusive of gender, social class, language, culture, educational need, and history/background. Data stated how participants enabled CRP in response to ‘others’, both student and adult learners around them. Participants cited CRP numerous times as a vital component for influence of growth, successful leadership, and therefore, as an enabler of positive change.

Data also suggested participants had developed focussed attitudes and cyclic reflections, in response to student need. Repeatedly, the reference point for data around discussions and decisions centred on the learner demonstrating whom the participants viewed as their focus. Robyn discussed how she empathised with learners who struggle through language to access understandings, as a child migrant arriving in New Zealand and starting school without being able to speak English. Tane stated a desire to be empathetic to cultures not her own, in order that she gain access to the relationships that foster her goal for creative learning. Alex deeply believed that to care for the person first, to support that person to become a successful individual, is to learn to exist “in the positive”. Robyn described how her understandings of CRP enabled her to access an “even, **not** the same, but **equitable**” classroom culture, providing a safe environment in which learners felt confident to take risks and embrace failure as a positive access into productive learning habits.

The power of culturally respectful relationships and impact on an individual was powerfully illustrated when Alex spoke of his vision for relationships and where that understanding came from. Discussing empathetic relationships with learners as “being the glue” to his success with students, the researcher asked from whom did he learn this deep empathy? His reaction was shocking, tears immediately streamed down his face. He had received this empowerment of being treated with empathy from his grandfather, and until that point, had never connected the reason he deliberately attributed empathy with students. The level of retaining, rebuilding, and strengthening each person’s dignity and mana was evident from all participants. Alex stated *feeling* this modelled CRP, was difficult to put into words, but easily identified when felt as secure and comforting, is what then enabled him to model CRP to others. The expert concurred with the participant viewpoints by stating that culturally responsive is ‘the only pedagogy’ because CRP is the desire to represent the learner, and is in his ‘being’. Tane, one of the Intermediate teachers uses Te Reo extensively in class instructions and makes a point of not repeating them in English. Tane discusses ‘ka rapa te whai’ meaning ‘many hands make light work’ and ‘unity is strength’, as an example of CRP to enable and support collaboration within her team and classroom.

4.2.4 Change/Shift

All participants indicated strong opinions of change/shift happening *to* them - externally by curricula, policies, directives, how they understood their role, and responsibility within ‘themselves’ contributing to an external change/shift. The data signalled common areas of priority for the participants. All positioned from the viewpoint of learner need and pride in students’ achievements. Data signalled participants acquired awareness of change/shift in themselves, due to few common beliefs. Each understood the shift in nature of curriculum and

how current ‘happenings’, were not meeting learners’ needs. Understanding this shift, each described how they constantly reviewed and updated personal attitudes by reflection, through desires to improve learning performance and provide authentic contextual experiences through stepping into the world of the learner. Robyn gave the example “If we really want Technology learning to be successful we’ve got to really try to bridge that intergenerational gap... So we get that education”.

4.2.5 Flexible Perspective

Flexible perspective, describes locations of experience, information, and perspectives, sought by participants that existed at a ‘distance’ from their own physicality, expertise, or specialism. This involved participants seeking sources from unexpected, unusual, or irrelevant contexts, which they assimilated to their needs. This was evidenced in a number of ways. Tom experienced many years’ service in the Volunteer Service Abroad (VSA), being able to, “turnaround and improve people”, becoming more and more engaged in wanting to work with young people because he understood many social environments he otherwise would not engage with. Alex described his role as “enabling the transition, the movement from one stage in life to the next” in his goal of preparing students for their futures. He constantly spoke of “the real world outside of school”, and how this last part of school, is about transition into “work and life”. He role-plays being “the boss”, mirrors expectations they will have from a boss, and constantly spoke of the workplace. Alex, a primary trained secondary teacher, described how he lead inquiries by “constantly reading, being aware of social, economic, and political events on a global scale”. He explained how he gives “opportunities for personal relationships and how they in turn reinforce the purposeful nature of learning” by “being open to new tools and new ways of ‘being’”.

The expert supported the need for TaI activity to include flexible teacher perspectives:

They need to constantly search beyond their four walls as to what's happening. ... it's the old case of eyes wide shutting. You've seen it then you have the opportunity to use that inside your own environment (Luke, interview two).

4.2.6 Professional Learning & Development (PL&D)

This minor sub-theme emerged due to participants sharing views of PL&D as supporting and of relevance to TaI activity, as part of in-service continuing education for the teacher, and also where needs were not met through pre-service, Initial Teacher Education (ITE). Robyn reflected around weaknesses in her own ITE as not containing pedagogical theory, but argued: “You pick it up, you see it modelled, you hear it, and you read about it. You take it on board”. She saw the responsibility to lead her staff inquiries, researching, and time to analyse, as a rewarding aspect of her role. She explained how it is easier to look objectively at the inquiry of others than to look at her own, and ideally, is a collaborative activity involving people who *know* each other. Tane explained how the new construct of understanding is “harder to manage but is manageable - all you have to do is help the students to achieve their dream or vision”. Tom explained how he transitioned through the traditional skills ‘follow me’ training, but sees an urgent need to shift away from the ‘old construct’. Robyn agreed with Tom, explaining how she also trained this way, but observed different student needs and it is her job to respond to that. She described how some observed teachers are scared of giving control of choice to the learner; some do not see the NZC as an enabler. Tane agreed that ‘follow me’ style teaching is easier, as all outcomes were the same, meaning it is easier and quicker to prepare for predetermined outcomes.

4.2.7 Collaboration

This sub-theme contained aspects of participant's views around perception of their skills and understandings how they collaborated, led their staff into developing collaborative understandings, and saw the wider role of collaboration from a whole school perspective. Participants all offered supporting strategies for collaborative practice with learners and colleagues. Tane purposely included teaching of clear communication skills, in order that collaborative practice can occur in predetermined groups of learners. She enforced collaboration between sectors to enable students to understand where they sit in the process of learning at intermediate level and high school level, by showing and discussing work completed later on, and how it fitted into current activities. She co-constructed and evaluated programs of learning with staff and students to ensure informed decisions are in direction of improving practice. She involved client schools and constantly revised contexts of programs reflecting changing school cultures.

Tom described students as drivers for collaborative practice, telling them explicitly, he welcomed questions beyond his field of expertise, as opportunities to discuss with students his learning, as new contexts and challenges arose. Alex discussed classroom behaviour management as a shared responsibility. He was proud of his achievement of no referrals² for six years as testimony of successful relational strategies. He desired to collaborate alongside learners evaluating learning constantly. Data revealed how collaborative feedback was intended to develop scope of consideration for learners, and enable confidence in realising the importance of

² School system to exit disruptive students from class

their contribution towards collective goals. He cited this as his most powerful tool and told the students how their comments and feedback help him. He discussed with pride, collaboration experienced within the community, whanau, local business, and industry, modelling shared tasks of collaboration, benefitting children's futures. He shared strategies to develop and maintain close relationships with tertiary organisations so he knows which placements are most suitable for learners. Alex described how he has built this community of learning over a career spanning forty-plus years validating this as "businesses know we produce good people so yes my reputation is very important, and so is the quality of my students".

4.2.8 Decision-making

This sub-theme appeared as an awareness within the individual, of deliberate actions around their ability and quality in processes leading up to decision-making. This very quickly showed as being of considerable importance and depth of reliance and connectivity to other themes because of what participants viewed as contributing factors. Participants demonstrated depth in responses and understanding decision-making: for individuals, directions for teaching & learning policies, curriculum design and pedagogies, leadership (middle and senior leaders) and assessment.

Situations participants commonly experienced were surprising, in how they created opportunity for self-independence. This varied between being out in the world 'totally alone' at 16 years of age, joining the workplace and having to survive, to being the head of the family in early teens and having to step into a role with adult responsibility. Another, inspired by her teacher, became head student, trained, and then entered teaching. The last participant, inspired to such an extent by the powerful influence of the relationship with his grandfather, embarked on a life-long

journey to provide the same positive influence for thousands of students in his care. Alex deliberately described and mirrored messages within everyday teaching, of ‘how to be’. He aimed to be purposeful, and constantly communicated these decisions to students.

I say to them at the start of the year, everything I do you might think is totally random, but everything I do has a reason. I do it for a reason. ... So that it’s purposeful, everything I do or say has a reason behind it (Alex, interview one).

Tom saw the “truth in, and respect for the individual, many languages, in many situations”. He deliberately used humour to build respectful relationships and diffuse potential conflict with students.

The expert supported a notion of deficiency as he had noticed patterns of deficiency nationally as a young adult early on in his career, and was “deliberate in his desire to make a difference”. He was purposeful around modelling and analysing decision-making process so he enabled skill and ability in students, and is thankful to “be trusted”, for the ‘freedom to dream’ afforded by current employers. He spoke passionately around systems he developed in order that decisions were as informed as they could be. He gathered information from a wide range before making a decision, and once it is made, stands true even in the face of opposition. Luke described how this could be a source of conflict as some people can want to hear a ‘predetermined response’:

... this is the one where I got called at another research thing, very much a controller of life, and I would agree with them. I’ve got a very strong sense of who I am and therefore I am prepared to do what others don’t. Which is to say no, or to say yes, or that I will not bend because so you don’t feel awkward, I will not bend because you might get hurt.

(Luke, interview two)

Robyn spoke passionately about learners and staff, diverts questions and attention away from herself, and puts the needs of others, as first priority. A common trait amongst all participants. “I’m not good at talking about myself; I tend not to like to focus on me”.

Teacher participants described of feeling in a “no win” situation. They were happy to develop and upskill, progressed their own understandings, and those around them, but felt any real benefit was thwarted by decisions made completing processes, so changes were made but progress unsustained. Tane described how she attempted to shift colleagues in their practice, and was told, “I haven’t got the time for that” as teachers experienced career disillusionment through perceived inequitable time allowances. An example was resulting in intermediate teachers being required to cover for primary colleagues observing other lessons. Robyn spoke of pleasure when whole-school teacher inquiries introduced at school, then turned to disappointment when senior leaders restricted and controlled time allocation to inquiries.

4.3 Interpretation and Relevance of ‘Self’

Participants demonstrated a very wide perspective or philosophy, when observing and drawing conclusions from observations, experience, and information. It appeared that for very different reasons, each participant gave clues around developing external systems of intentionally generating and collecting a balanced viewpoint, based on *multiple viewpoints*, before becoming informed attitudes of the individual. Interestingly, these outputs appeared very similar in nature surprisingly all sharing the attribute of ‘standing firm’ or ‘surety’; however, the causes were diverse.

Participants appeared to arrive at similar conclusions, making similar decisions via differing pathways, without any communication or intention between them to do so. What was also unexpected was the nature and complexities of facets. It was how these were paralleled and common across the participants, whilst being independently supported by the expert participant as a national perspective. Interestingly, felt as isolated and only experienced by the individual teachers, but actually were shared, common occurrences across wider teacher leader experiences.

4.3. Social

4.3.1 Introduction

In the ‘Social’ theme, data suggested the most desirable quality of a social group from the teacher perspective, was a collective voice speaking through an understanding and focus of the new construct enabled by culturally responsive pedagogies. The nature of socially located culturally responsive pedagogy differed when situated in the group rather than the ‘Self’. A focus of CRP appeared to depend on *how many* of the individual philosophies were embedded and informed by attitudes and an ability to reflect. Of those who understood themselves they noticed how in groups, those qualities in others became more obvious, and how that influenced understandings of others’ abilities and attitudes. They noted how their understanding transformed into a strength of empathy towards others as opposed to previous criticism, who were yet to develop self-understanding. Robyn expressed considerable shifts in her leadership capabilities when “three years in this mode” of taking an ineffective teacher through competency procedures without support from her principal and “having used almost every tool in my toolkit, there’s got to be more in there”.

The nature of sub-themes transformed when located in the ‘Social’ setting, becoming much more influential, apparent, and powerful. Data suggested that if a leader with culturally responsive pedagogical philosophies led a group, collaboration, PL&D, and flexible perspectives then enabled the group’s informed decision-making. All participants cited CRP specifically as the most vital aspect of a group ‘make-up’. It quickly appeared as a key ingredient to the success of positive relationships within collaborative groups at both department and whole school level.

Sub-themes located within the ‘Social’ theme included: CRP, informed by individual attitudes, and reflection, enabled collective collaboration, PL&D, thereby resulting in socially located informed decision-making, shift/change, flexible perspectives, and collaboration.

4.3.2 Attitudes

Attitudes in the social theme differed in nature, to those located in the self. Participants clearly understood how deep knowledge of themselves enhanced some professional relationships and impeded others by creating conflict when differences in attitudes were perceived as threats. Depth of self-knowledge appeared to enable leaders and collaborators of learning, to inform decisions of what is important for social relationships. Positive and deliberate attitudes communicated socially by all participants as a deliberate influence on self-esteem as demonstrated by how Alex spoke to students, “I am a positive person and my job is to keep you out of the negative”. Participants agreed that learners who felt rejected might be attributed to the belief that they cannot achieve what is required. Participants felt that this might explain learners feeling their sense of loss of individuality/mana, as they feel part of a system that lacked genuine care for them. “Because they don’t believe in themselves. Students have been told they have no skills or value”, and Alex tells students:

We have to change that... that’s why we’re here and what I want to do. I won’t go back through your past mistakes at this school, they are of no concern to me unless you tell me about them. Why would I want to do that and interrupt your learning? (Alex, interview one).

Alex also spoke with anger seeing many teachers since the 1970’s paying ‘lip-service’ to students and observing disingenuous relationships.

All participants spoke of deliberate use of humour in teaching as a way to engage each individual, build rapport and trust, and motivate expectations for culture in the classroom. Some spoke of being ‘whacky’ and sharing the passion for learning with students as a way of generating trusting relationships, energy, enjoyment, and enthusiasm for activities.

The data suggested participants perceive their attitudes to self-understanding, enabled a wider perspective in those around them, when others sought a broad outlook. Participants described how their personal growth, conflicted with colleagues who are ‘stuck’ within an old construct mind-set. As a significant barrier in enabling TaI, this was true for three out of four teacher participants and supported as a common occurrence by the expert. The fourth discussed how after an extensive career, as the leader of a small area with responsibility for just one staff member, he intentionally “distanced himself away from that” due to becoming “tired of the battle” referring to relationships with senior managers. One participant spoke of frustrations toward a colleague having ‘entrenched’ attitudes, repeating programmes with no modifications for different cultures, needs, or curricular development. “He leaves at 3:30pm every day, how can you do your job in those hours? He’s running another business on the side *and* teaches at night school”.

The expert spoke of requirements “to shift one’s thinking brings about the same emotions as grief - confusion, anger, disbelief, frustration, intolerance”. He discussed collective attitudes of learning areas to one another, explaining how middle leaders attitudes “in the old construct,

believed that there **is** the place of learning, whereas now needs to shift to a belief that their learning area **adds to** the child's place of learning".

Attitudes of relationships between senior leaders and middle leaders appeared as a barrier for all participants. Requirements for management and meeting compliance matters seen as absorbing too much time, at the expense of teaching and learning, and the national picture supported by Luke as, "current compliance pressure on middle leaders is coming more and more from the top. It's squeezing middle leaders who have no time to lead".

4.3.3 Reflection

Participants described conversations between department members around teacher performance and the resulting learner outcomes, defined reflection in a social location. When discussing aspects of social, data focussed on how teachers aimed to influence positive learning outcomes as an evaluation tool. Limited responses focussed on what participants perceived as important to them and staff. Responses could have been limited from a team perspective, or could have been results of directions from senior leaders. The national perspective from the expert, as expected, was wide ranging, and the presence of reflective activity, shown as a vital component for groups and teachers with whom he works.

Teacher participants respective to their smaller environments, echoed strong elements of a desire for correct and informed reflection, but due to their collective perceived lack of targeted

leadership PL&D, reflections were always informally completed as they understood the need and benefits for them to teaching and learning efficiency. An example is Robyn attempting to deliver teacher leadership PL&D for her staff, but found timeslots reallocated to meeting immediate compliance needs. The expert supported this crucial aspect of socially constructed reflection nationally:

So while that you're reacting to the management of a classroom, you're not addressing the **why**, that it's there. Inquiry based learning (for the teacher), talks about why is this happening, and do I contribute to the outcome? Am I as a teacher contributing to that? The teachers I have worked with, have all stated... "this has been the best reflective I could have ever used to understand why things happen". "Why haven't I done it before?", "I thought I was inquiring, and I was just band-aiding" (Luke, interview one).

Data showed how participants recognised needs for regular socially constructed reflection. This happened occasionally in faculty meetings, but one participant explained her meetings now took place in isolation on Google Docs, and busy schedules were not able to accommodate desired face-to-face time for discussing curriculum development, vision, what were individual 'end-goals', and socially constructed targets in achieving the 'end-goals'.

4.3.4 Culturally Responsive Pedagogies (CRP)

Participants understood socially located CRP as evidenced by feelings within themselves and observed in others, generated by on-going professional relationships. This sub-theme produced some unanticipated aspects influencing relationships of middle leaders and senior leaders. The expert spoke of senior leaders being the ones who drive the culture of the school by decision-making. This was visible to the teachers as they completed the strategies employed through policies determining how to meet compliance needs.

Participants shared attitudes of deliberate intentions to understand the mana and culture of individuals. Tom spoke of deliberate discussions with new students around language and culture. As a speaker of many languages, he invited engagement by explaining to learners that they too speak many languages. When they responded with thinking they speak only one, Tom explained they speak one language with friends, another with siblings, grandparents, and another with teachers. Tom deliberately created awareness of differing social settings as recognition of language as access into culture.

Stated with sadness, Tane overheard colleagues referring to Māori and Pasifika as **‘them’** (said in a derogatory tone) whilst in the same breath asking why students are not producing culturally responsive outcomes. “They won’t do it in my class”, referring to the environment they learn in, has no Māori/Pasifika terms, greetings, images, or dialogue teacher modelling. Robyn, an intermediate teacher, discussed how she aimed for cultural responsiveness in her role being supportive of colleagues needs, and senior leaders expect this of her. However, she expressed dismay and confusion, at not receiving the same support from senior leaders. This experience opposes that of CRP, which Robyn described as a ‘personal truth’ and found conflicting expectations, significant barriers to her ability to support underperforming teachers around their culturally responsive practice. Tom stated, “**who** is in charge of you can have a profound effect... because he didn’t allow me to grow. He **oppressed me**” (said angrily, with strength and pain). Alex too found disparity between what he is expected to model and what is modelled to him by senior leaders. “The listening doesn’t happen” when referring to his expert opinion of the needs to deliver a practical based, specialist subject. He counteracts this response by being culturally responsive with students. “I will not bring past negative history, I will not judge you,

and I will not make comment at all”. In this response, he sees it as “accounting for educational deficiencies by providing a remedy”. This lack of CRP within relationships between middle and senior leaders appeared to be received as a direct insult to the professional ‘mana’ or dignity and integrity of the teacher participants.

The expert supported teacher perceptions on how CRP relationships can contribute to school culture, and how that is ‘seen’ by middle leaders. He discussed how ‘knowing’, the relational understanding of the nature of middle leaders by senior leaders as;

Do principals and leads (deputies) take notice of what their middle leaders are saying? It’s called consultation but is it? Is the middle leader heard, or is it that I will ask you the question and you will respond, and at the end of it, I will continue on my journey in the belief that I have consulted you. A ‘Clayton’s’ consultation; a common practice in business, now evidenced everywhere (Luke, interview two).

All participants state frustrations over needing to be heard and supported by their senior leaders, when attempting to resolve problems or implement new initiatives. A common and important barrier of middle leaders and teachers is their feeling of not being genuinely ‘known’. Robyn explained her personal and team frustrations by senior leaders restricting their inquiry time, to a ‘cut and dried start and stop’ system; staff to complete one in a year then two in a year, feeling like a tick box mentality rather than an organic, cyclic process, which requires different time scales for different inquiries.

This aspect of data suggested participants as not known by senior leaders, as easily noticed due to their TaI attitudes to ‘know’ each learner as completely as possible, through respectful and

culturally sound pedagogies. Attention nationally was focussed on CRP and how this focus influences the professional relationships with the 'self', and others. This is exemplified in the observed reactions from teachers who start TaI process, and are amazed at the results:

Every child, there's a lovely, lovely thing of a child, that sits there and says "Nah". "I don't wanna do this. The reason I don't wanna do it because I've had a shite of a morning. I've had to do this, this this and this, to come to school". The teacher only reacts to the Nah, and says get out of the classroom. They don't see the iceberg that sits underneath. **They don't know the learner** (Luke, interview two).

Data suggested that across the four institutions represented by participants, and the large number experienced by national perspective, CRP was not common between middle and senior leaders, and the expert suggests this is because of the change in the nature of leadership, and how that influences professional relationships:

Leadership yes, because leadership's out of the old construct, is that leadership was "this is the way it is and this is the way it will always be"....It's not a singular direction as it's not only the senior management running the school as it's the middle leaders that will contribute to running the school, if it's run well (Luke, interview one).

The expert indicated how CRP had strong influence on the professional relationships within and between leaders, and how they are key to the goal of whole school success. The expert states for schools to meet the aspirational "lovely, lovely target of 85% level 2 by 2017", there needs to be a cultural 'shift' from the old construct of managing learning and raising achievement, to 'integrated pedagogies' if CRP is to become visible to the learner:

...if I'm as the learner asked to go into a class and write, and stop and turn around, and write down this, and stop and look up here, then I go to the next class of creativity that says to think for myself. This teaching practice of 'follow-me' puts children at risk of switching off because of being led, has an immediate impact on what happens in the next classroom (Luke, interview two).

Data suggested all participants have a position of themselves to which they hold true and that it is this position enabling transferability of CRP, from themselves to their learners. The expert spoke of being ‘David in the face of Goliath’ and holding true to himself in the face of the ‘majority walking out the door’. He spoke of this “*not* being a good space for anyone to be in, but one in which he feels comfortable”. All teacher participants reflect the expert here, as the dominating, common, and strong personal belief reflected as comfort in this situation from them representing the voice of the often ‘unheard’, the learner. Robyn supported this, “I will hold fast because of the learner. I love the kids and what I do”, signalling this Social sub-theme facet as a core, moral, professional purpose.

4.3.5 Change/Shift

This sub-theme represented particular aspects that participants had experienced, and desired to experience more, in a social location. This sub-theme appeared to resonate with all participants connecting the need for constant and productive change, with the core purpose of Technology learning area, aligning with their support and love of the curriculum (Ministry of Education, 2007).

Data described how participants developed understandings and sought the benefit of collaborative, broad perspectives to support social capability in managing and activating change. Teacher participants explained how developing broad perspectives were enabled through the creation of a well-supported Technology cluster across Greater Christchurch facilitated through face-to-face meetings and online forums. When discussing how colleagues influenced his change/shift in perspective, Tom stated, “colleagues can provide the freedom of expression and

creativity, or they can oppress you. People who are in control of you can make a huge difference”. Tom described how he views old construct mind-set as wearing ‘welder goggles’. “There’s no budging them because no one is making them change, they stay right where they are through fear of change - they don’t *see* the students or their colleagues”. The expert supports this example by stating, “The shift in the nature of management from Tomorrow’s Schools means they’re now leading schools and there are some teachers who are not aligning to the current mode”.

Participants identified that TaI resulted in a deeper knowledge of the child, and this made a significant difference in the effectiveness of learning. The expert stated that TaI “opens up awareness of pathways, a philosophy-looking beyond four walls, not assuming what they are”. He specifically described the shift, in which TaI “enables the teacher to grow step-by-step”. He exemplified this ideal as “belief change, it’s what we goal for”.

Data suggested participant teachers exemplified this pedagogy within the classroom. The expert stated, “The pedagogical shift in classrooms has to parallel the shift in leadership - specifically achieved by middle leaders understanding their relationship to one another”. Teacher participants aligned to the expert’s description of ‘good souls’ and described them as ‘being caught by barriers’, mirrored his experience of being caught by senior leaders expecting, predetermined ways of behaving, rather than how he viewed his behaviour needed to be:

So as a leader you might go and say, “I need you to go and do this **to** these people” whatever that this is... and you will say “yes, you’re right I need to do this to them”. However the way that I do it is *my way, not their imposing way*, and I will get to the same place, with the same result. The key difference is, I won’t do it **to** them, I’ll do it **with** them (Luke, interview one).

4.3.6 Flexible Perspective

Flexible perspective sub-theme is defined as attributes participants desired within social settings. Findings demonstrated participants deliberately sought understandings in national and global issues with groups, as they saw direct connection in how these perspectives supported their teaching practice. Intermediate teachers Tane and Robyn, expressed viewpoints related directly to their student learning and this centred around curriculum and pedagogy. The only inhibitor to a flexible perspective were frustrations from participants with colleagues who did not respect theirs, or the need for one in themselves, or understood the need for one socially. Tane expressed frustrations at staff feeling unable to realise authentic cultural contexts when they deliberately rejected support on introducing culturally responsive strategies.

Regarding the national quest to improve, the Māori and Pasifika 40% pass rate Luke explained passionately, “that’s **NOT ON!**” Describing teachers and leader needs to talk to industry asking, “What it is that you need?” He asked that teachers listen to government to understand economic challenges and engage with whanau and parents as “some are really struggling”.

“Transformational leadership required a global perspective - not to be stop/start, done and dusted, but to transform and improve”. He stated a wider perspective is required so a “viewpoint that observes patterns influences and effects to form informed perspectives and attitudes that can then be used for informed decision-making”.

4.3.7 Collaboration

Collaboration in a social setting was explained through reference to pedagogical thinking and includes learning environments and stakeholders with shared goals and a minor aspect of PL&D as requiring shared constructed activity. Participants demonstrated beliefs of difference, diversity and ‘everyone matters’ philosophies inter-related with CRP by deliberate classroom relationships. However, participants viewed relationships between middle leaders and senior leaders as counter to this, expressed a need for the same philosophical relationships themselves, as that they extended to students.

Teacher participants described how they operate as colleagues, by getting to know one another, rather than competing against one another. They were open to their own strengths and weaknesses, even actively seeking to share them in order that they encourage others to do so. Their aim was supportive and co-constructive conversations. Tom exemplified this purposeful communication, explaining how he saw collaboration via methods and systems of communication improve after 2010-11 earthquakes. He reflected noticing “stronger community links, like Māori and Pasifika family group cultures, as opposed to the ‘fend for ourselves’ Pakehā culture is what caused problems”. Tom described observing the growth of educational clusters and personal networks as trauma resulted in people seeking the support of others where they had not before.

Tane stated she “hates prescribed PL&D” and saw the main inhibitor of TaI as “poor quality PL&D driven by senior managers as irrelevant and meaningless, just an example of tick box mentality and money saving measures”. As a proficient Level 4/5 Te Reo speaker, she was forced to sit through “not even a level 1 course. It is not a partnership. Ever”. She described the effects of prescribed PL&D as “if no evaluation into the effectiveness of the PL&D, the passion, and creativity can be killed, not in teaching, for the management side”. The new construct of ‘everyone matters’ (Heffernan, 2015) was described unanimously by all participants, and understanding how this related to collaboration and informed decision-making. Tom described collaboration in his case, emerged from a father who left the family when he was an adolescent. The result was a shift in his collaborational nature to “see a need and dive right in”. The reverse of this attitude described as the impact of other’s actions by “those in control have power over, and are instrumental in the way I developed as a teacher”.

The expert underpinned this shared philosophy and cited movement of learners from one learning area to the next, as immediately understood cultures of learning, which each teacher created either intentionally or unintentionally. “So that what goes on inside a learning area, **does** affect what is going on in another learning area”. He described the shift in pedagogy, from the old construct to the new, and how the new need, created opportunities for new philosophies to develop. The new way differed dramatically in its focus integration of subject specific knowledge, to integration of collaborative pedagogies and methodologies. Specifically, from the ‘what’, to the ‘how’ and ‘why’ pedagogies:

You could say well if you take it from Geography, the rocks could be used in Science, I’m going no, no, no, it’s about what is actually happening as **the**

pedagogies the practices are that how we enable children to be children, and how we enable them to learn. It is very little to know what a science teacher knows or what an English teacher knows... While people do not share **how** they teach, and then **why** they teach, you're never going to get the change. You're going to be a singular bin. So successful schools that I work in, and successful departments, I sit around the table and say "**what do you do on a day to day basis** that enables your classes to be successful?" (Luke, interview two).

Senior leader's reluctance to move on poor or under-performing teachers was justified by the expert as observed beliefs by senior leaders as, "we're lucky to have them", contrasted and conflicted with good teachers not being given consistent opportunity to share capability, as an efficient way to destroy teacher 'openness' to learning.

This sub-theme included how collaborative attitudes to PL&D were vital to enabling successful learning relationships within groups as vital component for collaboration and successful teaching. Data revealed participants experienced a lack of collaborative PL&D from senior leaders and minimal opportunity for leadership development, resulting in disengaged teacher-leaders. The expert justified the role for TaI within the new construct of pedagogy as, "the Hipkin's conveyor-belt mind-set of 'busyness' demanded an intervention for teachers to stop and think who they were. TaI can provide that". He described seeing a solution to accessible PL&D within schools by the awareness of vast skill sets that already existed and has yet to be 'tapped into'.

We have many experts sitting inside that arena. Yet we don't share the knowledge. "They are a good teacher and they are not such a good teacher" yet we don't develop, we don't enable the good teacher to share their capability strand. We just leave them as saying "they're a really good teacher", and we leave the other person as saying "well, we need to have them, and we're lucky to have them"... This would be, well if you had a chance to revolutionise, to change, you'd change **that**, in a school (Luke, interview two).

Reflecting on how the new construct for leadership has influenced collaboration between teachers, from a percentage of management to leadership duties, the expert suggested a current balance of 70% management, and 30% leadership currently existed due to high demand at secondary level for compliance matters. He expressed observations many opportunities are lost due to the potential for collaboration being lost to a decision of power and control, instead of investigating what leadership attributes sit within staff, right in front of them. The expert enforced the relationships between middle and senior leaders is crucial for positive collaborative relationships. He reflected with sadness that he saw the power and control aspects all too often, overshadow the potential of collective collaboration, jeopardised what could easily be successful philosophies.

4.3.9 Decision-making

Decision-making within a social location transformed from a singular focus in nature of ‘self’, to the social capability to influence others. Data stated all participants are proud of the shifts they enabled within the thinking of others and how it influenced the person, and outcomes. The expert explained how TaI process has enabled teachers to make deliberate decisions to acknowledge themselves, enabling the learning to transform.

Tane discussed relationships between middle leaders and senior leaders as ‘politics within a school’ and how they affected student outcomes, ‘soaking up’ teacher energy. “Instead of feeding learning energy, you are taking it away from learners”. Tom discussed decisions made by his leader resulted in changes around philosophies. After feeling ‘oppressed’ creatively, he made choices adopting the mana of “ask forgiveness not permission” taking actions without

permission from his leader. Tom says, he found his sense of freedom again, things improved for him professionally when they did not talk. The expert supported Tom's experience here by saying how he sees the culture of management structure, driving the culture of relationships within the school and how 'teachers get caught by the barriers put in place'. He described classroom teachers needing policies and decisions, which enabled teachers to focus on their strategies for learning, while senior leaders focussed on student achievement data and meeting compliance needs. He saw some school wide foci being around compliance matters for all staff as 'ticking the inquiry collective box'. This was usually around behaviour initiatives like PB4L (positive behaviour for learning) or Blooms taxonomy and how this resulted, "they're not allowing the teachers to focus on their own personal inquiry which is very different, far more effective and forms relationships".

When discussing external or social barriers to focus teacher inquiry, three out of four teaching participants agreed, the most influential decision is one of large class sizes. Tom stated simply, 'to enable efficient learning relationships, the number of students has to be a reasonable amount for that to happen'. Tane supported this barrier of class size as enabling the curriculum to be visible to the learner:

So now we've got some classes with 24 and there is literally insufficient space for a student to develop modelling or research their materials. You have to actually start restricting choices, because it's not manageable to have students all doing something completely different, you're the only person there trying to be their support or given stakeholder. So you have to limit it, which is such a shame (Tane, interview one).

Alex discussed how class size was the biggest barrier to him developing positive learning relationships with students, with allocation of suitable facilities a close second. He described this barrier as:

I just feel as though the real listening to the needs is not happening. I try to understand another person coming at it from a position of authority and they've got a job to do, and I try my level best to understand where they're coming from. And I just think they need to look at the way the school is now structured and what is required for the 21st century (Alex, interview one).

The expert's experiences with supporting teacher development was largely successful. He stated how the 'belligerent' behaviour of some teachers he has worked with have brought about changed decisions around increased reflexivity within him:

Some times that I work with some body to enable a shift that sometimes, no shift is okay. No shift is okay, yes because **they** haven't shifted but **I** have in the way that I work with their **belligerent** behaviour. That **they** don't know that they've got it, this enables **me to make the shift**, not them. Once **I** make the shift... Yep. That's the important thing. It's **not assuming** that everybody has a certain process to this, it is Technology at its best. Coming from all different starting points that **nobody is the same** (Luke, interview two).

He described how the fourteen schools worked with last year have 'shifted'. He saw middle leaders he worked with develop, and school leaders saw the value of it. "But that does not mean that it will automatically become a school-wide shift..." He observed schools sometimes focus towards their immediate needs. "So they don't always see the inquiry, whereas I see that the inquiry is the responsibility of every teacher to do this. And the school looks at the bigger picture". Data suggested strong influence of successful teacher inquiry in what the expert observed nationally and how that is supported by teacher participants. Individual teachers demonstrated understanding the impact decision-making around TaI policy had on all learners, by how they spoke of it. It is challenging to get participant emotions through clearly in this chapter, but one quote is effective:

There's a number of children who have left school this year... but they have left school to go to employment, to go to tertiary, **to go to where it had not been the case before**. In the past these students had left school because they thought the school was not meeting their needs, in a **very explicit** way they would speak about it. Now students talk about that they are **going places** (Luke, interview one).

Luke described how he views decision-making within individuals, and how responsibility of change lies within the person needing to change, that they cannot be 'fixed' externally. A common scenario is he finds staff members are 'allowed to plod'. They have never been allowed to generate their own set of professional values, 90% of teacher belief is in the need to be lead, so they get 'told' what their standards are, and are used to being 'told' how to be, not given the opportunity to form independent decisions. The expert described common expectations to deliver a predetermined outcome when working with a school:

You see people don't want to hear the noise, they want to ask you, "How are you going?" and ***don't want to hear***, "I'm having an absolute shite day today". They go, we don't want to know that, we want you to tell me that everything is beautiful (Luke, interview one).

He spoke around relationships that are more direct; how teacher decisions, influence learner achievement potential and described how a teacher's uninformed decisions (or prejudices) directly influence the child, a very rarely do senior leaders mentor and guide teacher decisions to become informed. Teacher decisions based on prejudices directly influence student achievement with the example, "they're Māori, dropkicks, and I guarantee they won't be successful". He described how inquiry is generally interpreted as a 'done' activity:

People's interpretation of what inquiry is... "I have got a problem, I need to fix it". Teaching as Inquiry isn't about "I've got a problem..." Teaching as Inquiry is saying I want to look at a range of students to be able to find out what it is that they are learning. This is not a problem. It's all about "I wanna get bad-aids out and put them on"... it's not about Band-Aids. They're not looking at inquiry as a way of 'being'. (Luke, interview two).

Luke went onto to describe a typical event within a school when he was invited to support positive change, and how senior leaders saw the need from *only* an achievement philosophy, and how this is to the detriment of potential progress.

Leaders don't always see that by teachers undertaking their individual inquiries that these inquiries are rich in data, this data can also lead to teachers challenge them as leaders as the middle leaders have the potential to start thinking differently as to how the systems of the school impact on the student's achievement. Too often department inquiries focus on year level, gender, school wide literacy. This being the **traditional lens** used to look at achievement of children (Luke, interview two).

Data from participants, suggested they perceived their environment to be isolated as the wider school community outside of the subject has little understanding around their shift. External decision-making is uninformed and negatively affected the middle leader's ability to achieve success for staff and students. Data stated middle leaders experienced challenges in supporting struggles on a personal level for teachers within their teams to make changes. They cited the reasons for failure, as decision-making beyond their control, having to prioritise time spent on compliance rather than pedagogical and transformational leadership, and use of pre-determined and ineffective tools for meeting compliance. This aspect was confirmed because of the capacity to influence change, as it existed within a school:

Middle leader is probably.... 70% management, 30% leadership. And the reason why I say that is because middle leaders ***do not have the capacity to influence change.*** ... What they **do** is have a voice that's where 30% comes about, is they have a voice about **how they would like to lead** their departments and their staff. What I would say in there though, is that **some people** have a 70-30 the **other** way (Luke, interview one).

The expert explained how important it is for leaders of learning areas to integrate, not through specialist content, but through the sharing of pedagogy; how and why they do the things they do in gaining positive outcomes with learners-both child and adult. He stated, "It isn't poor teachers

or the department as dysfunctional, it is the culture and practices around those that prevent them from becoming successful”.

4.3.10 Explanation of a ‘Plant’ Analogy

Throughout the remainder of the thesis, the researcher has used the growth and well-being of a plant as an analogy to assist the reader in understanding the process of change within the Tal model. To illustrate the movement of growth within the teacher learner, the sub-themes within ‘Self’ theme, is represented as ‘plant nutrients’, as these appeared to be the required components in order that the individual experienced productive pedagogical growth. Interestingly, data appeared to indicate a need socially for an external additional ‘invisible additive’ to ensure the process continues successfully. To continue the plant analogy, ‘fertiliser’ described the need of what is required so that the wider school culture, local clusters, and Board of Trustees achieved the socially co-constructed wider perspective to support classroom learning effectively. At a more distant level, the analogy of the plant ‘flourishing’ is used to represent the national educational opportunities of potentially transformational policy initiative processes existing within larger national educational bodies.

4.4 Transformational

Findings within this third and final theme described how participants viewed the influence of wider groups, to enable, or inhibit the practices of change they are there to support. The sub-themes in this stage situated around the secondary priority of assessment theories and compliance processes that enabled this to operate. From that focus for teachers, data indicated how compliance needs could be met through simple modes of capture, and a vision of contextual

learning could drive the development of assessment theory into a new construct and align with the vision of the curriculum (Ministry of Education, 2007).

The role of assessment theory, and how systems operated to meet the needs of compliance were unanticipated findings that unduly influenced developing teacher philosophy. The theory of assessment within school culture either enabled or inhibited the influence around a group's ability to be constantly improving philosophical understandings.

4.4.1 Compliance

Compliance existed in many of the other sub-themes, not as a theme in its own right, rather a sub-theme that demonstrated the consequences and focus in direction, of other themes.

Compliance defined many aspects of administrative responsibilities in teaching: assessing and reporting, pastoral responsibilities, and attendance. Particular to secondary settings, assessment compliance, administered by the New Zealand Qualifications Authority (NZQA) has strict procedures in place for marking, moderation, and administration, collection, and analysis of achievement data.

This sub-theme is of high importance in this study, and is revisited again later, as data from teachers indicated it is a major barrier to the prioritisation of time on the teacher-learner relationship so crucial to effective TaI pedagogies. Internal compliance processes are 'handed down' to school-leaders from the Ministry of Education on top of buildings and operational

responsibilities, legal compliances, responsibilities as employers issued to schools, include teacher registration, staff appraisals, ERO, independent/self-review policies and departmental/faculty review, all with the sole purpose of raising student achievement. Compliances specific to secondary settings are focussed on the gathering and analysis of assessment data, and this has been subject to extensive workload reviews since standards alignment in 2011; the most recent review in August 2015 (Group & members, 2015). This increasing but vital aspect of the teacher's role was accepted for its contribution in informing learning philosophy, but the perceived inefficient ways in which these were met, were cited by all in frustration, as the cause of much wasted valuable time. High school teacher participants were aware of NZQA workload reviews; however felt the changes required to efficiency never 'trickled down' to where they were most needed.

In contrast to high school teachers, intermediate participants had different and equally frustrating challenges with workload efficiency in meeting compliance needs. Robyn saw the biggest external barriers around workload, were associated with administration of money, and availability of technician support. She stated, "Approximately one third of her time is consumed with chasing money, fees from client schools". She described being regularly at the supermarket at 7am, justifying to her principal how, "you need to be organised with the resourcing as it is a huge part of our curriculum, you have to be organised and ready for students as the majority of learning is practical". She felt deflation as the response from the principal was, "That's the nature of the job, but they don't pay you eighty something thousand to go shopping". "No, that's fair comment, but who else is going to do it?" Are you going to allocate me some staffing for that?" and the answer is always no. Lack of ICT support is another barrier Robyn states restricts

what they can do *with* the students, directly limits student experience. Tane has seen many teachers lose their passion due to teaching content restrictions. Some are “scared to move on, perhaps risk-adverse, so they stay”.

The expert mentioned the huge volume of compliance matters which involved extensive decision-making in senior management of a school and how they do override the core business of teaching and learning as schools focus on ‘immediate needs’:

They call them compliances that they must go through, the NZQA, critiquing... There’s all these things that must be done, the student behaviour, the drugs, the young people’s health and hauora³, there’s all those other things that sit inside of, alongside of this needing to be done too. So sometimes schools will focus towards their immediate needs (Luke, interview one).

Putting these needs into perspective, the expert also stated, “These voices need to be heard by senior leaders and be where the school is at”, and suggested a re-focus as, “but the stuff that happens in the classroom, we need more time for”. In some schools and disciplines meeting compliance for NZQA processes, checking, preparation, pre-moderation, cross moderation and marking then external moderation, produces difficulties. “Generally fine in a big school in a city, but much more challenging if isolated in a small school then time spent travelling becomes a barrier”. This study welcomes the fifteen recommendations of the working party groups in their efforts to address this issue for teachers and school leaders (Group & members, 2015).

³ Maori philosophy for health unique to New Zealand

4.4.2 Vision

This sub-theme emerged through participants expressing understanding around perceptions of what the intended long-term direction and vision was of wider policy, the differences they perceived to be between old and new constructs, and how that influenced their practice in the classroom and with staff. Teacher participants described this use of defining differences in the new and old construct as a main contributing factor in philosophies. Alex described beliefs that in the old construct, “students feel as if they have no value-we have to change that”. He described how “I like the challenge of turning around a totally disinterested boy, into a totally changed boy”.

All participants agreed that since the 1995 Technology education implementation, teachers have experienced unprecedented change to the nature of their professional duty subject nature and content, resulting in many unexplored understandings from the wider educational community and non-specialist school leaders. Initial Teacher Education (ITE), has contributed to barriers currently experienced. Twenty years ago, the 1995 curriculum required a skill set around specific knowledges. Outlined by the expert, “It took skilled tradespeople and trained them for entry into teaching via a one year Diploma Certificate skills based course. This was for education which ended in year 12, was 55% craft, 25% related studies, and 25% design ability”. There was no pedagogical training and no Year 13 course leading to university entrance. This generated many Technology teachers with a way of operating in silo, with a ‘follow-me’ style of delivery. Now entry into teaching is via degree entry only, but still required a change in context and exposure time to culturally responsive pedagogical strategies. The expert stated, “In-service training needs to be mandatory for teachers to be attending courses because of the shift that’s gone on”. A broad

picture of the current Initial Teacher Education (ITE) at University of Canterbury (UC) emerged during the data gathering process, in a personal communication with senior lecturer at UC, Dr Wendy Fox-Turnbull. This outlined the secondary education course intake as 50% of students enrolling directly from a first degree, and 50% adults returning to education. Courses consisted of approximately 50% pedagogy study, pure skills 20%, a brief introduction of TaI, and about 1% of CRP. Staying with a national perspective, the expert signalled that the decisions around ITE provision for the skills based 1995 curriculum, had resulted in ‘a place to hide’ for staff ‘fixed in skill and knowledge development’ mind-set. ITE had not provided the platform for some staff to “demonstrate understanding, creativity, and adaptability”.

Teacher participants and the expert all underwent this type of ITE, and all acknowledge difference in the capability to bring about the shift themselves, as opposed to those staff who are in need of intervention to change. He goes on to state how school culture is shaped. “The culture of the school is driving the teacher. The culture of the school is. The management structure drives that. The teacher does not necessarily want to do that. All teachers want to be good teachers; they’re just being”. He cited the reasons for this as the multi-disciplinary nature of the subject as ‘vast’ and one, which is dynamic in nature, generates an increased requirement for on-going PL&D. He shared frustrations of achievement standards for learners being achievement based, and if teaching and learning were happening as it should, all students should be able to meet required achievement goals.

High school teachers described a deliberate attitude to assessment as “one of personal excellence” which is situated as a priority, in the knowing of the individual. These attitudes go back to personal beliefs. These are contrary to beliefs that the system has instilled within teachers, what to pay attention to is excellence ‘labelling’ of a few, not personal excellence of each individual. Another mirrored aspect is one of “on-going attention”. Intentional intervention to shift thinking from a ‘start-stop’ goal of the results being important, to a focus on cyclic life-long learning pedagogies. Very similar to the ‘problem-fix it/Band-Aid mentality’ (discussed in more detail in the assessment theme section), to ensure learner engagement.

When discussing the nature of change for leadership, expert Luke described how pedagogical leadership is progressing well and what is now required for focus. Transformational leadership is required from senior and middle leaders to enable a shift in practice to improve the capability of the teacher as the expert described:

We’re all reviewing, we’re all thinking, we’re all inquiring.... Turning that into something is that transformational which is not necessarily happening because...? Time. The pie (Luke, interview two).

Luke indicated that he perceived the solution to the challenge around time, is “compliance time can be alleviated by simple modes of capture”. He summarised policy direction for collaborative practice supporting initiatives from the Ministry of Education around collaborative practice Investing in Educational Success (IES) (Education, 2014b), “If you’re only hearing your internal voice you’re only hearing the same thing going round and round”. Looking around wider influencing decision-making, the expert spoke of his pleasure and happiness now that the ministry “had moved towards that being PLD is personalised in schools. So I think I’m far more

effective being in school, working with people than standing in front of people where they nod their head quietly all day and then go home and do nothing”.

4.4.3 Assessment

As the last of the originally identified sub-themes, assessment referred to the methods of gathering data on the relationship of teacher interventions to student achievement, and how these informed inquiry. This sub-theme developed initially as minor in volume, however, as a very influential theme and a significant driver, in relation to others. It was viewed as a ‘main driving focus’ and ‘priority’ for those in the system above that of middle and teacher-leaders, and provided many of the main platforms for conflict and difference in philosophical perspective. Teacher participants provided examples of deliberate attitudes to knowing the learner first through positive relationships, keeping their philosophy simple, as empathetic relationships, caring, was what enabled engagement of the child for successful learning. When discussing the connection of teacher inquiry, to the ability to provide formative feedback, the expert used the analogy of a ‘new construct’ of feeding and watering a plant in continual growth, as opposed to the ‘old construct’ of measuring the plant at significant stages. He described teacher inquiry as a vital component to successful assessment strategies:

It’s the most essential item of it. If I don’t know where my children are and what they’re doing, how can I provide formative assessment, and so the inquiry enables them (teachers) to know where their children are at, and what they need next so that they can ‘feed the plant’ (Luke, interview two).

All teacher participants described strategies that placed the individual ahead of the assessment requirements, providing evidence they understood the deeper levels of sustained learning by explaining how the ‘feeding and watering of the plant’, prioritised individual integrity, ‘mana’ and learning confidence, directly enabling the progression of a child’s learning. Alex compared

this pedagogy to the old construct of measuring the plant as observing teachers during his long career as “disingenuous”, not paying full attention to the child, but “lip-service” in the lack of understanding in knowing learner needs, required for the role. Teacher participants provided examples how they illustrated the small but significantly powerful effect on both the teacher’s ability to add to the child’s learning, but also to what the student needed to develop a cyclic approach to learning which will be sustainable for them as an individual. Summarised by:

You’re not measuring what the plant needs to be able to move to that point. You’re just saying you’ve got to point 2 and you’ve got 9 to go. No. It’s not a bullet point you tick, at all (Luke, interview two).

The expert described observations over the last two years around how decisions around assessment drive policy and time of teachers. Described how many schools senior leaders sole focussed on achievement, resulted in the teacher’s perception of their own value, as one of gaining the highest accolades. This strategy resulted in the instruction to teachers of what to pay attention to is the two highest standards in NCEA, Merit and Excellence level, of as many students as possible, as opposed to the personal excellence of every student. The other significant point the expert raises here, is one of an overall shift in process. Describing the focus as on the ‘end goal’, which aligned and supported the ‘problem-fix it’ mentality of surface perspectives discussed previously:

A lot ... see assessment as the end goal. They are very driven by the ‘end goal’, and it takes some time to bring them round to the understanding that formative assessment allows the summative to fall out and so they are driven by that, and it’s almost a sense of worth... “look, I got 10 children with excellences, so I must be a good teacher”, there’s all that sort of ... celebration inside of themselves, but they’re not seeing the picture that I see (Luke, interview two).

How the effect of minor changes in the teacher and leader perceptions could result in a huge difference for student achievement and how that looks in the ‘new construct’ and concludes with:

When I look at them, that they now have thirty children that have achieved, that prior to that have not achieved. They're not measuring that in themselves, they're only seeing the top-end. I suppose that is problematic of an old system, where we've been celebrating 'the teacher of excellence', not personal excellence (Luke, interview two).

4.4.4 Modes of Capture

When asked about barriers for TAI, participants demonstrated skills as highly proficient problem solvers. Time wasted on inefficient compliance matters resulted in many suggestions for increasing efficiency in meeting the compliance demands. ICT 'tools' were stated as unexplored solutions, and frustrations clear around the possibilities for these new tools and how their use could revolutionise teacher roles. Intermediate participants indicated a desire for the 'streamlining' of student management systems used in client schools to support the on-going transference of student data. Systems that do not connect and allow data transfer quickly to stakeholders, were time consuming and problematic, resulting in data remaining at the source. Requested single systems that aligned with high school systems were tabled as solutions. Participant suggestions around smart tools to reduce compliance time, centred on immediate needs within the intermediate and high school environments.

All teacher participants discussed solutions for routine compliance processes. Data capture and analysis monitoring attendance, progression, and achievement were suggested as more efficiently completed by administrative staff. Personal and department appraisal systems were suggested as easily achieved by systems focussing on efficient ways to gather, collate and analysis what is already existing, rather than additional processes repeating the same actions. These views were supported from a national perspective:

Under this present delivery mode, that will probably be locked for the next 10-15 years they will be 70% management because of the compliance. Until we get smarter in what we do,... a child comes into the classroom and it's acknowledged by face recognition.... that when a child is finished doing their work online, and it's 'Googled', that will be an assessment made then it will just drift off into a reporting that will be a weekly report or something to the parents, Moodle will enable it. Just give me 50% of that time and I can change the world with time alleviated by simple 'modes of capture' (Luke, interview two).

4.4.5 Summary of Findings

Barriers to TaI effective pedagogy exist through all three themes, however, these increased in volume and influence as findings moved away from the individual focus into social locations. These barriers appeared as significant when moving into social locations outside of the specialist learning area of Technology due to perceived lack of non-specialist understandings. As teacher and middle leadership roles needs evolved, the findings appeared to indicate how policies and processes supporting evolving roles had failed to keep pace.

Whilst this study focussed on the practice of the four teacher participants, the data naturally centred from their perspective, on their student's learning. What became visible early on to the researcher, were the aspects all participants focussed on as required for student learning, reflected equally in participant requirements supporting their own adult learning development. These aspects of learning suggested by the expert, aligned with organic processes for plant growth. When located in the individual, five common traits of reflection, flexible perspectives, growth mind-set, and deeply empathetic natures, support of the NZC as recognition of the purpose of schooling, the participants appeared to have generated their own 'nutrients' totally

independently; the necessary conditions and ingredients for successful teaching philosophy using TaI as a dominant tool.

When teachers discussed working in a social setting, they appeared to suggest that if enough members of the group contained the desired ‘nutrients’, they experienced an additional awareness of the group being ‘boosted’ as if some invisible ‘fertiliser’ had been applied. This aspect concurred with the Gilbert reference to “the magic happens in the spaces in between” (Gilbert, 2005) and began to unravel why collective and fluid knowledge capacity was now important, because it was greater than the sum of individual parts. This element of the change process appeared to contain the greatest volume of frustration for participants, as in the secondary setting, the dynamic, and industry driven subject discipline sat uncomfortably within the institutional, traditional academic schooling culture.

Data suggested all participants sought understandings of national educational policy initiatives, and how these had the potential to positively influence and transform their daily teaching activity. Participants, possibly due to their maturity and experience, perceived this distant but powerful element of change, as having the potential to enable learning on a massive scale, to ‘flourish’. In the opposite extreme, participants expressed frustrations of teachers who were perceived to be “paying lip-service” to students and colleagues as being disingenuous in their relationships, their philosophy being about their ability to gain ‘10 Excellence grades’ as opposed to all realising personal excellence.

Chapter 5 Discussion and Conclusion

5.1 Introduction

This chapter responds to the research questions by discussing findings, specifying what enabled the four teacher participants to develop and maintain effective TaI philosophies and practices.

The findings indicated all participants possessed five distinct but common traits:

- 1) Reflective Cognition
- 2) Flexible Perspectives
- 3) Growth Mind-sets
- 4) Empathetic Natures
- 5) Knowing the ‘End Goal’, a deliberate philosophy centred on the ‘new construct’
purpose of schooling to create the desired future society, the nature of the 2007 New Zealand Curriculum (NZC).

The discussion aims to provide meaning related to the complex aspects of professional personality, attitudes, dispositions, how they were brought about, and how the nature of each of these aspects alter, depending on *where* they are located. Most importantly, how these five traits successfully direct learning within the ‘new construct’ the purpose of future schooling in the NZC:

- 1) How these develop within the person (self)
- 2) How these function within school culture and communities such as department, and pastoral teams (social),
- 3) How the wider educational systems enable or inhibit TaI pedagogies (transformational)

Data from this study suggested the existence of a single underlying element, common across three locations, appeared to be the driving force for the five common traits - philosophic understanding the need for understanding the ‘end-goal’; purpose of schooling and need for educational change, as opposed to the perceived ‘end-goal’ of assessment data. The five participants had developed five common traits of practice in response to this change. Is this due to their specific disciplinary understandings regarding the nature of Technological change applied to teaching practice, or is it general understandings related to educational change, the five of them just happen to have?

This study only focussed on teachers of Technology, so whilst interesting, the question cannot be answered, only understood in this context, by investigating the phenomenon regarding a small but interesting group of Technology teachers. Over the last 30 years, their journey experienced as leading practitioners of effective inquiry pedagogies in Technology education, has been significant, possibly exhausting, and dynamic.

This chapter seeks to answer the main research question that guided this study:

What are the *facilitating conditions* that support Teaching as Inquiry (TaI) for Secondary Technology Teachers who are also Middle Leaders in Greater Christchurch?

To answer this question, the chapter is organised around three sub-questions, which together respond to the main question:

1. What aspects of **teacher philosophy**, facilitated success with TaI?
2. How does **school management and school culture** influence teachers as they conduct TaI?

3. What are the influences of **wider policy** on teachers engaging in TaI?

5.2 Aspects of Teacher Philosophy that Enabled Success with TaI

The five common participant traits discussed in the conclusion of the findings chapter:

- Reflective and analytical thinking around self-performance
- Flexible Perspective, accepting and open to change
- A Growth Mind-Set, ‘anyone can do anything’ attitude
- Empathetic, genuine, and kind nature of each participant
- The ‘End Goal’, a deliberate focus centred on the ‘new construct’ *purpose of schooling to create the desired future society*, the nature of the 2007 New Zealand Curriculum (NZC).

The traits appeared to indicate that, when successfully combined, results were formation of the elusive ‘nutrients’ of a successful teacher philosophy. This section outlines *how* the teacher participants enabled successful teacher philosophy by connecting the five common traits of TaI practice as a SCT tool to access the culture of ‘new construct’ learning. The study shows many clear indicators between the participant’s values and philosophies to the required desirable TaI attitudes.

5.2.1 Historical Background

Succeeded by ‘Tomorrow’s Schools’ policy 1989, an inclusive, national model of Technology education for all learners first appeared in 1995 as ‘Technology in the New Zealand Curriculum’. Wylie (2010) states ‘Tomorrow’s Schools’ policy appears to contain system-wide flaws, that findings from this study suggest, are still affecting the capability of teachers to focus on their core activity:

Aims are nothing without processes, relationships, materials, and structures to bring them to life, and, as it turned out, these were the thinnest elements of Tomorrow's Schools. There are two main reasons for this: the overall economic and social reform context within which school self-management was introduced; and, linked to that, the lack of understanding of the importance of system wide relationships and linkages for developing educational capability and capacity (Wylie, 2010, p. 7).

The introduction of National Certificate in Educational Achievement (NCEA) in 2002, replaced the School Certificate, University Entrance (UE) and Bursary for senior secondary assessment.

In 2007 New Zealand Curriculum (NZC) (Ministry of Education, 2007) then facilitated yet another significant change with the introduction of eight Components of Technology (COT) with associated achievement objectives (AO's). From 2011-2013 there was a year by year rollout of almost 150 new Achievement Standards at Levels 1, 2 and 3 respectively, to align with these NZC changes. If Technology leaders also included the Industry Trades Organisation unit standards in curriculum design, there would be potentially 500 assessment standards to 'master' and administer. This required huge pedagogical change in Technology education, mostly oblivious to educators outside of the learning area. The implementation of Technology Achievement Standards providing academic education in Year 13 for the first time enabled an authentic and economically responsive secondary pathway to university for high school learners. Technology educators experienced shifts and uncertainty nation-wide during this 18-year period.

This was further compounded in the Greater Christchurch region by the unique phenomena of the 2010/11 devastating earthquakes. As stated in the introduction to this thesis, due to these phenomena, Technology educators in this region could represent a unique opportunity to examine and understand how teachers and leaders experience simultaneous change in multiple aspects of their work. This could provide future direction for other more traditional learning

areas in understanding what is required to move towards a more responsive, future focussed, dynamic, and authentic experience for learners.

5.2.2 TaI as a Socially Constructed Tool

The sociocultural tool this study centred around was TaI. Teacher participants clearly demonstrated key attributes from sociocultural pedagogies when demonstrating TaI effectiveness. All teacher participants surprisingly evidencing the same five common traits as highly developed and successful action strategies beyond those expected in a professional capacity appeared to be at the core of who they were as a person.

Participants demonstrated how TaI was the tool used to realise philosophies of ‘new construct’ learning. They demonstrated the capacity to understand the need for a ‘new construct’ required constant change in improving professional practice, could be due to the nature of the learning area they exist within, also being dynamic and in a state of constant change.

5.2.3 Individual ‘Nutrients’

This section discusses how reflection influences philosophical development. Data revealed similarities in the ways participants communicated considered attitudes informed by informal and constant reflection. According to standards set for themselves, and in response to standards set for them, participants demonstrated beliefs and values were considered, reviewed, evaluated, and revised exhibiting strong connection to Identity Theory (Compton & France, 2012).

Participants exhibited humility first then desires to accept they had to use reflection strategies to improve cyclically, responding to shifting learner needs. They also viewed this understanding of

change as a positive, allowing this to drive the focus of respect for individuality. To explain and clearly describe this relationship, a visual illustration (Figure 3) assists understanding each aspect identified as component parts of individual teacher philosophy, representing how aspects of the ‘self’ are related and connected.

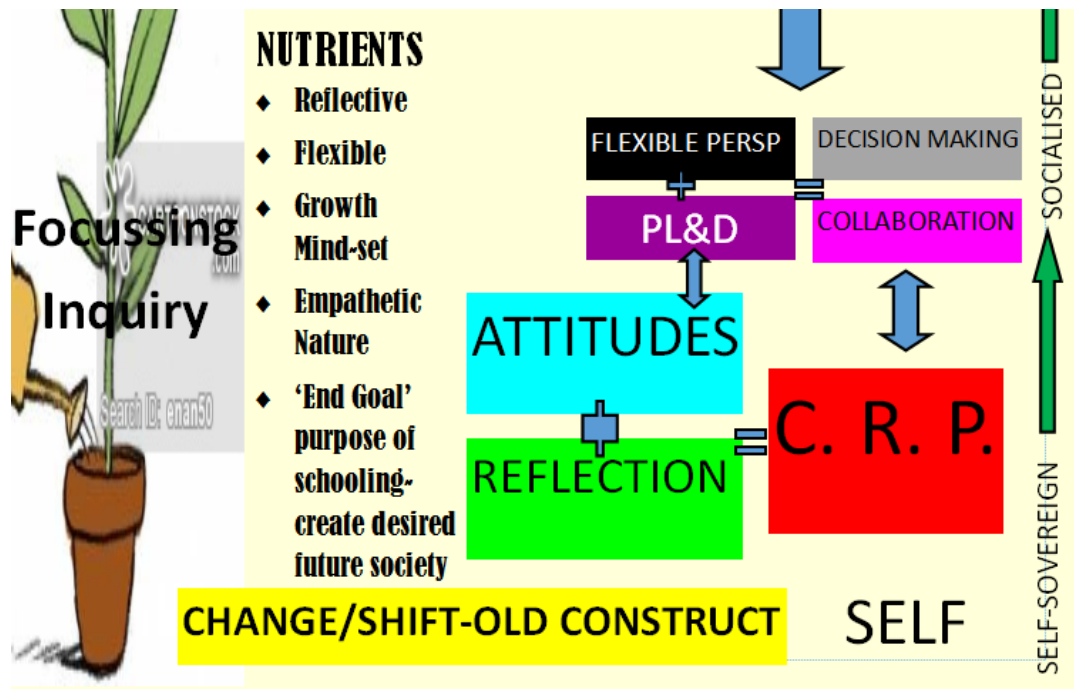


Figure 3: Self-Theme 'Nutrients'

The findings suggested five common traits (nutrients) are required for effective teacher philosophy. These five nutrients were identified by all participants as desirable characteristics, or globally constructed attributes perceived as necessary in generating an open and inquiry-based teacher philosophy. Specifically, these traits were found to include: attitudes, reflections, CRP, as existing more centrally to the self, and the remaining; change/shift, PL&D, flexible perspective, informed decision-making, and collaboration, as existing within the self, but able to be more easily influenced by social interaction. The importance of these component parts is emphasised by the relative size of each box.

Data suggested three vital traits as foundational; attitudes informed by reflections, resulted in an individual's capacity to exhibit CRP. A flexible perspective appeared to enable the development of a growth mind-set, and data suggested being the crucial difference between teachers with successful philosophies and those that were not. This was supported by the 'fixed versus growth mind-set' literature stating that people who can learn to adopt an open mind-set to learning make dramatic strides in performance (Dweck, 2010). Traits as nutrients therefore were identified requirements for a growth mind-set, enabling the organic (plant, signalling both teacher and student learner) philosophies to make 'dramatic strides in performance', allowing crucial understandings of the 'End Goal'; the philosophy containing the purpose of 21st Century schooling.

To understand the details of how these nutrients affected participants, an in-depth interpretive analysis was undertaken with data from teacher participants supported by data from an expert in the field of technology and professional development. Teacher participants demonstrated empathy with individuals as the driver and motivator for their passion, indicating teacher participants had made the 'dramatic strides in performance' reflecting growth mind-set and positioning participants in the self-authored stage of adult development (Garvey-Berger, 2012). This positive and open mind-set enabled development of attitudes informed by reflection, which enabled understandings to be responsive to constant change. Interestingly, all participants showed a distinct reluctance to discuss themselves, deflecting focus onto others, and only acknowledged their own achievements and successes when pushed.

A common attribute of humility, evidenced participants ability to connect to learners and generate desirable relationships, was significant. The attributes of humility and the role it plays in supporting effective TaI strategies, supported by Garvey-Berger 2012, indicated stages of adult development are socially constructed, and require specifically targeted and timely intervention in the form of individual support and PL&D, rather than routinely achieved by all adults getting to certain ages of life.

5.2.4 ‘Nutrient’ influence on Flexible Perspective and Informed Decision-Making

Teacher reflections centred on a desire to demonstrate and model awareness of flexible perspectives and collaborative decision-making. This was exemplified by teacher participants communicating a strong sense of self-knowing to inform beliefs on their leadership goals, to deliberately generate an empathetic and supportive culture with a growth mind-set for all learners. This aligns with Constructivist Development Theory ‘self-authored’ stage (Garvey-Berger, 2012) which stated the self, had to be understood before outside perspectives were considered. All participants had taken considerable steps towards significant development of individual understandings, and actively attempted and generally succeeded, in developing it with their teams. There are four recognised stages of adult development, and was generally acknowledged amongst teacher participants, that the progression was a positive one. Teacher participants had all actively taken steps over considerable careers to progress their own adult development and each of the four teachers, seem to sit between the third stage of ‘self-authored’ and the fourth of ‘self-transforming’ stages (Garvey-Berger, 2012). In contrast, the expert participant sat firmly at the fourth stage-likely due in part to extensive geographical and changing personnel exposure. Teacher participants appeared to be prevented from accessing the

final stage due to the restrictions of their role's leadership being focussed disproportionately in administrative 'routine' duties. Influences of teacher philosophy are discussed first, followed by school management and finally the influences of wider policy are discussed.

5.2.5 Teacher Philosophy and Appraisal in the Social Location

The relational and social aspect of successful teacher philosophy and TaI, is further communicated and supported by the visual representation of how the practicing teacher criteria (PTC) used in annual teacher appraisal and certification, aligns with the Best Evidence Synthesis model for Teaching as Inquiry (TaI). Figure 6 clearly shows how the process centres on the individual. The first three criteria are positioned around the 'self' (the yellow blocks). It then explains how those attitudes and reflections *enable the individual* to inquire into the specific needs of all learners. The next location of students and staff, in a social setting (the grey boxes along with blue boxes 4, 5, 6, 7, 8 & 12) is shown to transform and improve learning, by the adoption of a shifting, growth mind-set (the crucial link of the self to the wider contexts-TaI). Finally, acceptance of need for *changed actions* (the pale blue boxes 9-11). These three dimensions support the study findings of locating the inter-relational themes within both independent and dependent sub-themes.

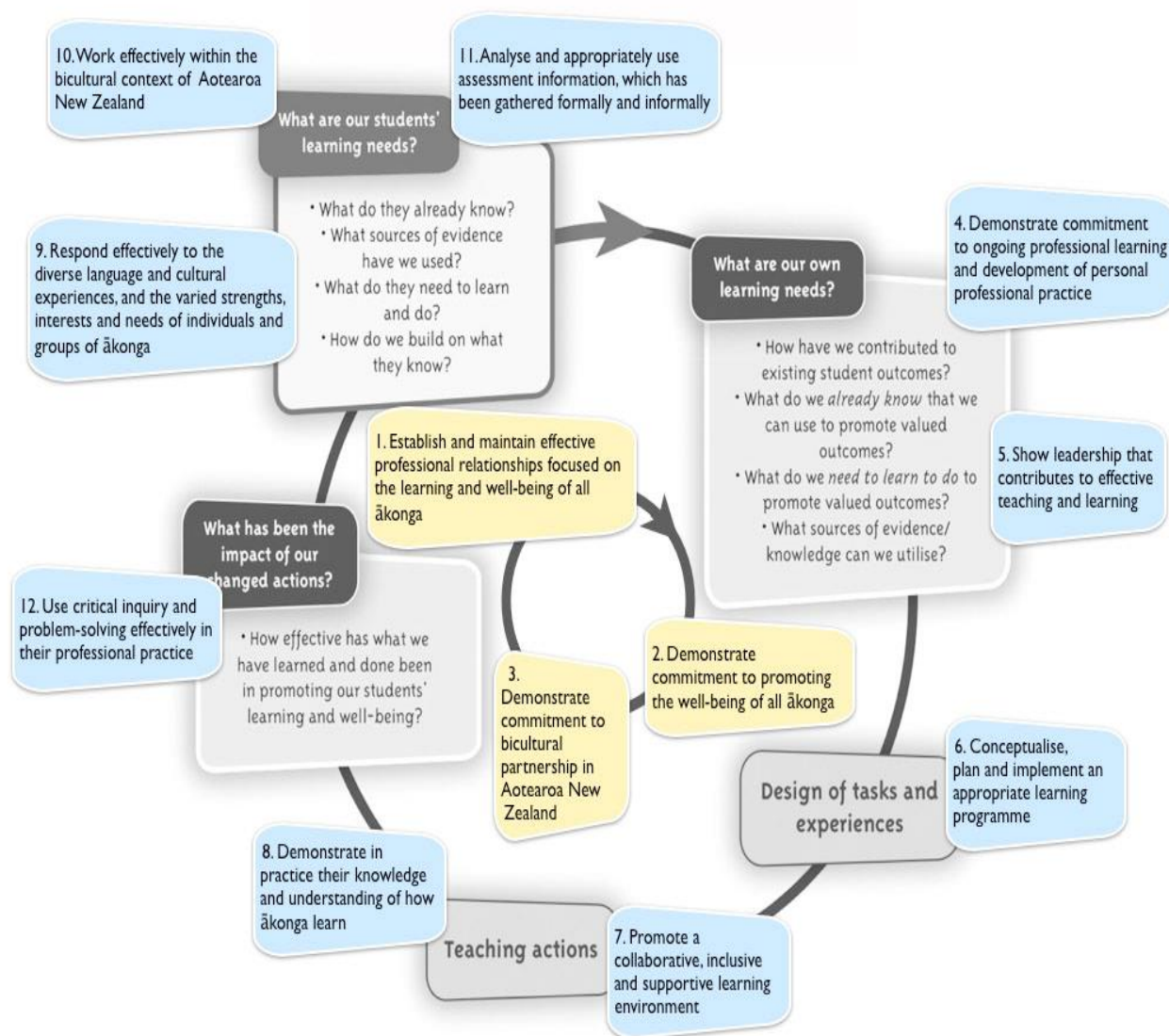


Figure 4: BES TaI and Practicing Teacher Criteria

(Adapted by Rate from Timperley's Teacher Professional Learning and Development: Educational Practices Series, p. 26-27, 2014)

5.3 How school management and school culture affected teachers conducting TaI

School management and culture referred to the societal, disciplinary, and hierarchical structure of individual secondary schools and described the environment within which the teachers operated. This was important to consider when researching what it was that enabled teachers to be effective inquiry-based pedagogics, as after the ‘self’, our immediate environment in the ‘Social’ location, was the greatest influence. For teacher participants, the impact of senior management had a generally negative influence on their ability to undertake TaI despite following instructions by management to do it. This section discusses the specifics of school management and culture on TaI.

5.3.1 Culture of Collaboration or Control?

If a culture opposes collaboration, then it is driven by power and control relationships; attention to qualifications and compliance reduce learning potential, and negatively affected both student and teacher performance (Kane & Mallon, 2006). Danger existed when a culture stated it is collaborative and then exhibited behaviours that threatened collaboration. Such as stating teachers can select their own inquiry goal and timescale; as long as it addressed student achievement in some way, then directed some teachers to different goals and enforced alternative timing as a clear example of the negative impact of school management and culture, independently cited by all teacher participants.

Literature described how social collaboration offers cultures ‘a wealth of rich resources’ (DuFour & Fullan, 2013). Participants communicated clear beliefs around strengths within collaborative

acts, and deliberately sought the support and benefits a collective society offered. They stated they ‘wanted to learn from each other, not compete’. Describing how they co-constructed learning programmes with students in order that they ‘influence the culture of thinking and the direction of focus’, within guidelines that teachers set down, modified each unit to individual groups.

Technology education and TaI shared attributes of a respectful, open, and inquiring nature and both have recently undergone extensive change. Technology Education focussed on understanding the human instinct to intervene respectfully with the environment (Ministry of Education, 2007). The focus of TaI was to understand how teacher actions positively influenced student learning (Timperley et al., 2007). This shared strength in relational focus and the resulting impact of those relationships, centred on individuals, and was enabled through positive, high trust, equitable and collaborative relationships. Thus, teachers who understood and became integrated with Technology curriculum philosophies are shown in this study as likely to naturally integrate with the TaI model, and as with the majority of this small study, without even being aware they are doing so. Outside of the scope of this study is the question “are Technology teachers, able to integrate TaI practices possibly more than other, traditional, static, or ‘routine’ learning areas?”

5.3.2 The ‘Stars’ Approach and Social Capacity

Heffernan (2015), questioned the need for change around hierarchical relationships. She argued that leadership cultures who exemplify a ‘stars’ approach, are “actively damaging social capacity” (Heffernan, 2015). ‘Followers’ who aspire to be ‘stars’ are placed in competition with,

as opposed to supporting and enabling through collaborative behaviours. Teachers and the expert supported this ‘anti-competition’ theory through their philosophies, desiring learning areas, middle leaders and teachers encouraged to share and integrate through pedagogy, what they do which is successful, to develop learning capacity.

School cultures that encouraged competition between groups and individual learners may be destroying collaborative strength. Heffernan names this strength, ‘social capital’ and advised that professional trust and interdependency is vital. She aligned with educational futures literature and the philosophical nature of Teaching as Inquiry, stating “today’s big problems demand that we need *everyone* to be utilised for their energy, enthusiasm, motivation, ideas, talents, and attention, if we are to increase capacity” (Heffernan, 2015). The ‘everyone matters’ lens is an aspect of TaI participants exemplify through discussions around class size. Because they understood individuality and the importance of knowing in depth, about each learner, increased numbers becomes an immediate barrier preventing depth of knowing, therefore reducing teacher effectiveness with individual learners. Data indicated participants shared a desire for change in the areas of professional relationships and hierarchical social constructions. It is suggested that current professional relationship based on power and control hierarchical structures are directly damaging the teacher’s ability to sustain, maintain, and develop, personal pedagogical philosophies.

5.3.3 Pedagogical Integration and Collaboration

Teacher participants perceived their refined and successful TaI philosophies, to be of minimal use when in the social locations of other learning areas and this created dilemmas within

participants as to where the common ground existed, and participants feeling alienated from the whole school culture. The expert supported this dilemma as stated earlier in the findings with the statement that supported confusion amongst teachers who assumed connection via integration in the location of secondary, is through disciplinary content as opposed to pedagogical understandings.

5.3.4 Impact of Individual Mind-set in a Social Setting

Astonishingly, three out of the four participants identified that their use of TaI as a SCT tool, enabled learning ‘fluidity’ and the collaborative practice participants desired when they were leading learning with their colleagues. The fact that three out of four participants exemplified the practice of teaching and learning becoming ‘responsive’ to the situated context validates Sinnema and Aitken’s 2011 research into understanding why TaI hasn’t been more widely adopted (Sinnema & Aitken, 2011). Moreover, this finding also secures TaI’s position as able to define and generate what it is that society perceived as what constituted desirable teaching strategies. Historically, Vygotsky (1896 –1934) stated a ‘zone of proximal development’ is demonstrated by shared perceptions of participants communicating their attitudes to learning as the capacity within each individual as fluid, not fixed, and only able to be strengthened and increased through guidance and collaboration with ‘a more knowledgeable other’ (cited in Stetsenko & Vianna, 2009).

5.3.5 Culturally Responsive Pedagogies or TaI?

Practitioner Inquiry 2006, re-labelled TaI 2007 by the Ministry of Education, was defined as “identifying discrepancies between what is intended and what occurs as the focus of investigation” (Sinnema & Aitken, 2011). France and Compton (2012) described strong

connections between Identity Theory and learning to inquire. They also described social and cultural identity linked decisions made by learners when deciding whether, or not, to take part in meaningful learning activities. They described how ‘acceptance of learning, signals acceptance of a community that may contrast in beliefs, values, ways of interacting, and being, to their own’ and the individual has multiple identities, depending *who* they are interacting *with*’ (Compton & France, 2012). Language aimed for individual innovation and creativity was an enabler of co-construction of meaning and transferability across groups, is the highest order of cognitive thinking. The data indicated participants understood and had actioned a re-focus on their core responsibility to inquire into the teacher-learner relationship.

Data also provided examples of participant’s shared lens in the generation of common strategies to enable learning relationships via culturally responsive pedagogies and the national expert perspective confirmed these strategies as effective to achieve this re-focus. For example, strategies exemplified by Tom with how he approached new classes included his explicit discussion of spoken ‘languages’, introducing the students to the existence of multiple cultures, and proposed a possibility for them to generate more inclusive cultures of their own construction. Similarly, Alex and Luke both were deliberate with communicating their beliefs and values, as examples of their cultural ‘ways of being’, and making explicit for their students the specific behaviours required for others to participate positively in the class, should they chose to.

Participants demonstrated strong beliefs in gaining as much information as possible from others, when making decisions. They relied on relevant research, extensive professional networks, and developed a ‘wide lens’ or growth mind-set, to support decisions and future actions. They

actively sought advice from experts, relied on clusters such as the successful Greater Christchurch Technology Learning Community Cluster (GCTLCC), networks, and collaborative relationships, and deliberately constructed collaborative environments to meet their own needs as they focussed on solving problems and adding learning value to each student presented to them. This was found to be contrary to the ‘narrow lenses’ or fixed mind-set of some Technology colleagues and leaders. Clarke (1994) suggested two ways of dealing with teachers who do not seek guidance around decisions from contemporary research. “Teachers engage in ‘small actions that resist expert advice’ except on their own terms in order to solve problems of direct interest to their practice” (cited in Lantolf & Poehner, 2014, p. 18). Data suggested participants personally disagreed with this view, however saw it clearly evidenced in others. Findings therefore suggest that successful TaI pedagogies are perceived to contain the same essential components as culturally responsive pedagogies.

Culturally Responsive Pedagogies - the foundation of TaI?

An underlying but vital element of this study, focussed on experiences of Technology educators and how they have responded to recent changes in the nature of their discipline and wider educational systems. The study participants were selected, as they appeared to display evidence of deliberate strategies, which not only gained consistently positive outcomes for learners beyond those evidenced by assessment data, they demonstrated aspects of exemplified TaI pedagogies. Participants appeared to demonstrate clear understandings of their core role, had taken steps to devise strategies that efficiently deal with, or ignore distractions away from a core inquiry learning focus.

The differences in the world of a Technology middle leader, compared with other learning areas, in the schools of the participants, are apparent due to the demand for every teacher to develop leadership capability alongside ‘adaptive expertise’, as many teachers are commonly the only teacher of a specialist area. From the researcher’s personal experience, this creates increased need for attention to individual relationships, identity, PL&D, support, and mentoring compared to other learning areas with multiple teachers engaged in duplicated activity or ‘routine expertise’ (Lin, Schwartz, & Bransford, 2007). Differences in needs for learning areas: leadership, support, and workloads, soon become clear, when viewed through an ‘adaptive’ or ‘routine’ philosophy of learning. Unique and recently emerged characteristics of the Technology learning area were previously discussed in chapter 4, and are simply summarised by Tom in his desire for school cultural understandings as through subject ‘elitism’ or hierarchy. He observed attitudes within the school culture reflecting ‘academic’ achievement of the traditional subjects of English, Maths, Science, as the more important ‘core’ subjects only perceived pathway for personal excellence, and ‘elective’ or ‘option’ subjects as lower in status, and afforded less learning time, when all assessment standards have equal value regardless of subject.

Perhaps the unique positioning of the dynamic Technology curriculum, recent in its implementation, vast in disciplinary content, and highly responsive to research, could go some way to explain the participants demonstration of understanding the importance of flexible perspectives, and has forced those teachers willing to take up the challenge, to develop a ‘broad lens’ or growth mind-set. They deliberately inquired into, realised the potential importance of their role in modelling open attitudes, and inquiring perspectives to learners, received instant gratification from the learners around them, thereby enabling the cyclic inquiring mind-set.

The ‘vastness’, as Luke phrased it, of the learning area is perceived as both an enabler and a barrier to change. It was an enabler because of its dynamic, inclusive, and individualistic approach (Keith & Compton, 2010). It was a barrier due to the lack of availability of PL&D, and demand for continuing professional learning demands on teachers. Findings therefore suggest the participant philosophies are supported by a foundation of culturally responsive pedagogies, and is a successful pathway to developing effective TaI pedagogies with learners.

Other distractions

In a learning area dominated by approximately 80% practical activity, resourcing needs for each of five or six one-hour classes per day, are consistently high and time-consuming to prepare for, maintain, manage, and administer. Frustrations were described as “an exhausting never ending battle” at wasting time on technician duties, which seriously diminished time from core learning priorities. This point seemed to be a particularly sensitive one amongst all teacher participants, perhaps because they clearly understood how their effective pedagogies positively influenced students and their outcomes, yet the budget restriction systems of the school management and non-specialist cultural understanding, actively prevented them from having teaching and learning as their core focus.

This aspect concurs with Kane and Mallon (2006) who indicate “areas of detracting” needing to be “intercepted and withdrawn” to restore teacher focus to core learning priority activities.

A good place to start is in debate about what really is the teacher’s core role. If teachers are primarily expected to support student learning, development and achievement (both academic and social), then it is critical that other areas that currently detract teachers from this work are intercepted and withdrawn from the teacher’s day to day responsibilities, or, alternatively, that teachers are given the strategies and support to divert such activities to more informed and appropriate people (Kane & Mallon, 2006, p. 163).

As with the aspect of technician support, class size was expected to be an influence. Surprisingly however, class size and the expectation of union's support in cases of under-performing staff, were offered by all participant teachers to be the biggest two barriers to teachers being effective with TaI, with technician support as a close third. Class size was the single most influential factor in establishing meaningful relationship conducive to positive student outcomes (Hattie, 2005). Teacher participants stated sadness observing other teachers compromising, 'writing-off' some students whom they describe as "not able to achieve", and suggesting some uninformed staffing decisions made by senior leaders were inhibitors and common across the secondary Technology sector. The data showed ethical and potentially socially destructive dilemmas arose within teachers when deciding which students were most in need of attention, and which not to focus on.

Solutions

Clarke (2006) recommends to close the research-practice gap, enabling effective pedagogical model of TaI by "inverting the assumed researcher/practitioner hierarchy whereby teachers are on top with the experts and administrators below and in their service" (Clarke 2006, cited in Lantolf & Poehner, 2014). The expert supported this view with the statement, "it's not only the senior management running the school as it's the middle leaders that will contribute to running the school, if it's run well", and hinting towards a re-focus on the core purpose of schooling and teacher role. This re-focus is not to negate the importance of the senior leader's role in leading and administering student welfare, staffing, teaching and learning, liaising with external bodies such as CYFS, Police, and Social Services. It is to review how these needs have increased to the detriment of the core learning focus.

A solution could be to re-position the decisions regarding these matters with senior leaders, but the lengthy processes involved with non-teaching educational administrators placing these ‘in the service of’ the teachers and roles of facilitating learning at the fore. The ramifications of this proposal could see a change to the traditional career pathways where the teachers with the most effective pedagogical philosophies, instead of leaving the classroom becoming senior leaders/administrators, could remain partially in the classroom having responsibility of delivering PL&D, mentoring and supporting less successful teachers in developing their effective pedagogical philosophies.

Findings suggested culturally responsive pedagogy (CRP) was the common attitude trait amongst all participants and how this could be key to gaining positive outcomes with students. The same sub-themes were evident in a social environment as the ‘self’, however, nature of sub-themes differed when in social locations. This resulted in the sub-theme CRP becoming by far more an influencing factor (refer Fig. 5 below) within social settings for a focus on TaI to be enabled.

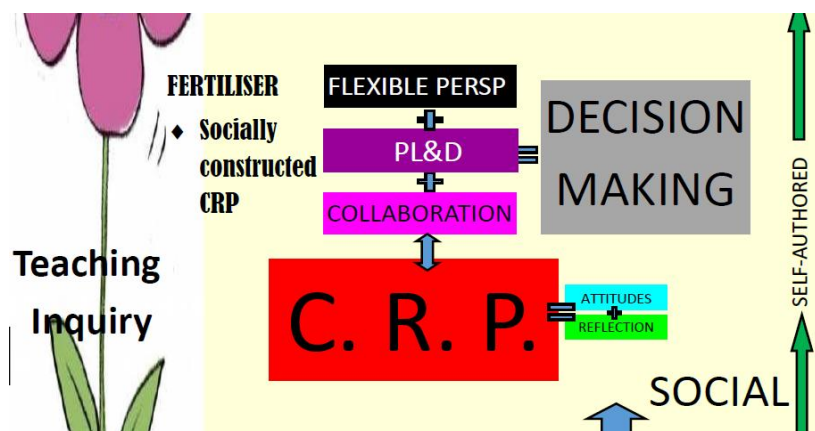


Figure 5: Social Theme ‘Fertiliser’

When successful, the social activity experienced by the members of a team can be viewed as ‘fertiliser’ within the social theme for supporting the continued growth of the ‘plant’ learner (see pp. 76, section 4.3.10.). CRP was viewed as the missing element representing the difference in relational philosophy separating the middle leaders from the senior leaders. Describing CRP as ‘essential fertiliser’ was described as an invisible but ‘strongly felt’ professional brick wall responsible for the majority of the daily frustrations experienced.

5.3.6 Professional Relationships

Negative impacts of barriers on each participant on a personal level were clear. All five participants had experience spanning decades of service, exemplifying and improving their own learning practice and that of others. Whilst improvements around raising standards of learning were acknowledged and celebrated, the cost personally to each participant was significant. Teachers described being ‘in the middle’ feeling ‘damaged’, ‘tired’ and ‘not much left’, and the expert, “the challenge has been to identify that all is not flowing in the world”. This caused many feelings of despair and sadness, and statements made of a negative impact on health and well-being. Personal stories of the dedication, time, and passion given to achieving the best for learners, had been at a personal cost to them. As their colleague, the researcher found this particularly challenging to witness. These precious human resources typify the ones all good leaders should aspire to protect, support, develop, and encourage, yet to the reality of the participants, the opposite appears to be true (Kane & Mallon, 2006, Garvey-Berger, 2012). These negative and shared experiences appeared to suggest that having developed successful teaching philosophies with a strong foundation of humility, whilst beneficial for other learners was personally damaging to participants when they were located in social settings outside of their learning area. This study appears to evidence disconnect in the system’s capacity to support the

middle leader at a personal level within their own schools when collaborating across learning areas. Reacting correctly to recognised learner needs, by developing successful strategies, participants appear to be more disadvantaged, than if they had not developed successful strategies. This finding suggests the system of social and hierarchical structures in a school could be damaging the ability of the participants in the activity it exists to promote.

Further synthesis of this finding could indicate teacher participants accessed the transformative and relational nature of the Technology learning area as an ideal discipline for generating adaptive and responsive growth mind-sets resulting in their successful teacher philosophies. However, these appeared to conflict with the perceived fixed mind-sets of school leaders whose focus was not on relationships, but on time consuming and complex operational matters and assessment data, and was distanced from the priority of the learner as a person. Participants described professional relationships with senior leaders as generally unhelpful. Not intentionally unhelpful, however, but due to perceived lack of specialist understanding of learning area needs, and the occasional unwelcomed introductions of power/control relationships as an alternative to genuine engagement. This emerged as one of the largest inhibiting factors to developing teacher philosophy, due to the focus of middle leaders working in an opposite or conflicting mind-set. Teachers prioritised a deliberate ‘depth of knowing’ relationship with colleagues and students, in order to access peak performance in gaining positive outcomes. Faced with overwhelming demands of content, resourcing, and staff needs, Technology teachers who are middle leaders required additional understanding collaborative relationships within their specialist field, which appeared to make much clearer, the realisation that they did not experience this understanding and collaborative relationship outside of their specialist areas.

This is evidenced by the example of the underperforming teacher allowed to continue practicing at the known risk of student safety. Perhaps this indicated teachers were not viewed as equal learners, or senior leaders do not have a focus on knowing their teacher-leaders, as their priority is given to the running of the ‘self-managing’ school (Wylie, 2010). Alternatively, adaptive/responsive strategies to changing needs were seen as unnecessary or as unachievable due to the ever-present budget constraints and perhaps the complexities of the vast Technology curriculum as being in the ‘too hard basket’.

Participants share frustrations of not being heard, or genuinely engaged with, by senior leaders. This seems exacerbated by directives from senior leaders and curricula, to increase engagement, ironically asking teachers to inquire into ‘knowing’ the learner. Three of the four teacher participants were attempting to remedy belligerent teacher attitudes within their own teams with little or no support from senior leaders. This was supported from a national perspective the expert described senior managers as generally, “not interested in the noise”, and how they wanted everything to be good, and are not interested, or have little time to hear the issues. Teacher participants stated how they were given issues to resolve, but not supported collaboratively by senior managers to resolve them. All participants voiced frustrations at feeling ‘stuck’ in this seemingly unresolvable situation, and how each have over the years adopted strategies to cope with this with varying degrees of success, such as attempting to resolve issues by working extreme hours, or the opposite of doing just what is reasonable; walking away, to intentionally disconnecting with issues. Participants perceived some senior leaders as focussed on statistical achievement; consequently, some pedagogical relationships with middle leaders perceived as the equivalent of ‘teaching to the standard’ in an old construct tick box/Band-Aid

mentality that conflicts with CRP. Participants perceived this, as damaging to their ‘mana’ and the capability of teachers and middle leaders, to focus on effective new construct pedagogies in their goal to transform learners. This data was supported by Kane and Mallon (2006, p. 68) in their study identifying lack of support impacted seriously on teachers’ ongoing commitment to teaching. When pushed during interviews, participants displayed humility as a positive human emotion beneficial when learning with children, but became a negative, almost abused aspect of personality when understood by adults/senior leaders, and could be interpreted as a common tool of strategy within power and control relationships. This finding aligns with Constructivist Development Theory (Garvey-Berger, 2012) stating the transition to the self-transforming mind sees individuals ‘find organisations too constraining and leave, when the qualities of mind they possess are exactly what the organisation need...’

5.4 Influences of Wider Policy on Teachers engaging in Tal

Wider policy refers to the national education support systems: Ministry of Education, the Education Council, subject associations, the assessment authority New Zealand Qualifications Authority (NZQA), the New Zealand Centre for Educational Research (NZCER), research through universities, and the teaching unions. Futures literatures (Gilbert 2004-15, Fullan 2001-14, DuFour 2013) supported shifts in curricula meaning, through a developmental constructivist viewpoint. These suggested that education was an evolving process of development resulting in new ways of conceptualising the world, with the shared purpose or goal, that schools can create future societies, and crucially, all participants clearly understood and modelled this developmental constructivist viewpoint.

Study participants gave examples of conflict arising between the aims of their classroom philosophy and that of management. Management philosophies appeared to reflect the ‘old construct’ theory of learning as a ‘start-stop’ activity, concerned only with ‘end-result’ percentage achievement, as opposed to their philosophy of CRP, knowing the learner and relationships as the key to generate lifelong learners. Participants understood this narrow ‘lens’ philosophy was as required by school leaders following Ministry of Education directives to improve results. Participants saw the potential damage if these ‘*school management philosophies*’ were to drive the school culture in regard to ‘*teacher-learner pedagogical philosophies*’, which were very different in nature. Participants felt this placed them in a ‘no win’ situation as they perceived the system required them on the one hand to be developing effective personal philosophies, and then on the other, to not be given the time and support to do it, and precious time instead devoted to meeting compliance issues around achievement data.

Interestingly, the expert voice transforms its position during this final stage of philosophical analysis, from sitting in the background and referencing teacher perspectives, to leading conclusions. He described how he views the current state of education in New Zealand in reference to teacher philosophy, as “*attempting to meet the needs of children*”. He hinted at solutions, which may become possible as the ‘new construct’, shifts the nature of current barriers. He described how powerful relationships generated through TaI activity can transform learning potential, and estimated with a reallocation of just 50% of time taken up with compliance matters, “I could change the world with that”.

This national perspective on teacher philosophy, indicated that TaI pedagogies have the key to enable successful and inclusive learning for all. Clearly, the barrier of time spent on compliance, demonstrates the gap between the educational philosophy required to manage and administer a school required by senior leaders under a ‘self-managing’ policy, is in direct opposition to the TaI pedagogical philosophy that enables successful outcomes with learners.

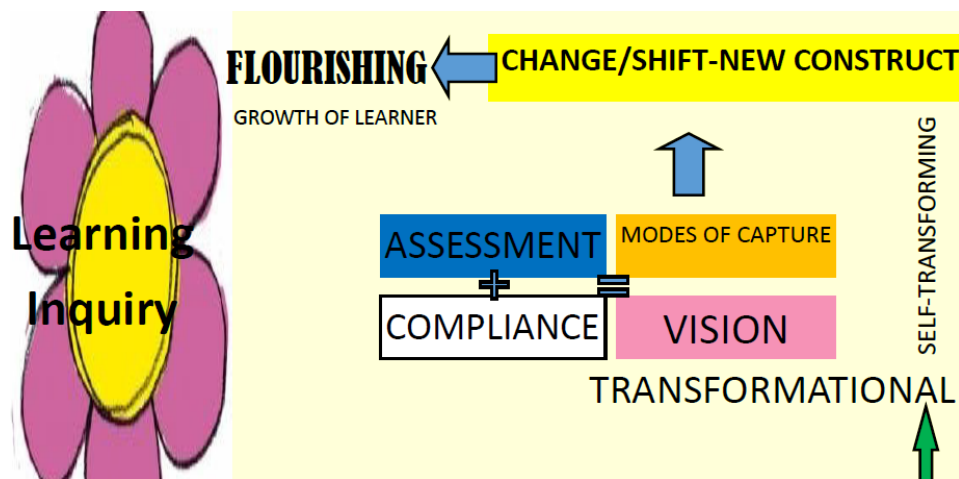


Figure 6: Transformational Theme 'Flourishing'

In Figure 6, 'Flourishing' describes the ideal characteristics of a 21st Century learner who achieved requirements described in the NZC 2007, Vision, Values and Principles (Ministry of Education, 2007, pp. 8-12). To the naive onlooker, these would be characterised as being motivated, engaged, independent, open and inquiring, able to work collaboratively, constructive, considered, and reflective attitudes, and exhibit desires of lifelong learning. Participants agreed this 21st Century learner environment, already consisted of the required components for a wider system that would support the learner. However, there were frustrations around how the nature of these components had resulted in unresponsive professional philosophies 'at the chalk-face' as many colleagues remained followers of the administration and management philosophies modelled by senior leaders, in order to secure promotion and professional advancement.

Significantly supporting this perspective, all teacher participants stated intention *not* to pursue, a senior leadership role, as their philosophies were in conflict, with those perceived as prioritised by senior leaders. Interestingly, all participants occasionally used the term ‘learner’ referring to students and teachers as equally experiencing the journey, reflecting the new construct philosophies.

5.4.1 How new learner needs at wider policy level influence teacher philosophy

All participants described being supportive of the nature of educational policy and particularly describe understanding the intent of the 2007 New Zealand Curriculum (Ministry of Education, 2007). Participants described a desire to reduce workload associated with compliance matters by the utilisation of ‘smart and simple modes of capture’. The expert predicted a range of digital tools and other systems are 10-15 years away from being realised, aiming to improve the efficiency of reporting, attendance, assessment compliances. Fullan (2014) described how this could be possible. “Only when system change knowledge, pedagogy, and technology are thought about in an integrated way, can technology make a dramatic difference to outcomes” (Fullan & Langworthy, 2014, p. i). (Technology in this instance refers to the use of technologically generated devices such as computers, tablets, and sensory products, and not Technology, the NZC learning area as in the rest of the text.)

Fullan and DuFour (2013) described how new solutions for administrative support needed to be investigated to enable data collection and analysis, and ‘new schedules for cyclic review and reporting’ and calls this approach ‘systemness’ (DuFour & Fullan, 2013). Clearly, this is what data suggested is required, for participants to re-focus on core business of teaching and learning

using the TaI model. Teacher participants also hinted at the restrictions they view within the roles of senior leaders as being ‘administration heavy’ on school logistics, not efficiently using skills of senior leaders to mentor teaching and learning.

The influence of teaching unions was an unexpected finding and one of significant influence on TaI. The intermediate teachers cited that two unions within one school environment created tensions between staff in the perceptions around different working conditions, “a ‘them and us’ culture which opposes that of collaborative practice” and that these affected senior manager decisions around the expectations for different groups of teachers. The other unexpected finding was the extensive and ‘workload heavy’ process for competency, involving unions for under-performing teachers, seen as counter to what was required for middle leaders to activate support from senior leaders. Three of the four teacher participants stated this as a major personal barrier, in practice, achieving department/team goals, and huge negative impact to student learning. One participant when requesting outside intervention was told by the principal, “The involvement of the unions is too hard and too time consuming”. The solution given was “one day-he’s going to do something really bad and then he’s gone. That is it. He’s gone”. A shocking statement from a principal and one demonstrating the usefulness of a process intended to support staff in maintaining high professional standards. Instead, it is causing deliberate decisions by some senior managers, to not, attend to problems that are risking the safety, health, and well-being of students. From the 4th of April 2016, Health and Safety Practical Guidance comes into force with increased regulations, accountability, and penalties for schools (Education, 2016). The reputation of the centre declined, schools gone elsewhere. Her reputation as a leader within the community harmed as she is viewed as allowing incompetence to continue at the expense of

children's learning, when in reality it is one out of six teachers who is negating the excellent work of the other five.

The Initial Teacher Education (ITE) pathways of many existing Technology 'trades' based practitioners into teaching has been via the training of a Diploma Certificate of Teaching and Learning, a one year course (Luke, interview 1). Prior to the NZC (Ministry of Education, 2007) curriculum demanded a skills-based 'follow-me' pedagogy, which resulted in demand for skills based practitioners who did not require pedagogical understanding. The majority of these teachers came from industry, and had no training in pedagogical understandings.

From the researcher's personal experience, these teachers were typically in specialist areas of construction and mechanical technologies, minorities being in the nutrition, graphical, and digital fields. Interestingly and unexpectedly, all study participants trained under this system, and pedagogically, developed themselves to meet new demands, whilst in-service, demonstrating high levels of intrinsic motivation resulting from their own often independent professional cyclic inquiry, exemplifying TaI activity.

Participants stated they received training under the old construct of skills based knowledge, and explained how they have observed, read, reflected, and sought advice on how to be effective in these new challenges. They presented the case that it is not the lack of contemporary training, but the attitudes within the individual, which seeks out growth strategies, enabling personal shifts,

evidencing significant individual shifts are possible. The expert summarised the national situation in acknowledging:

... for a lot of teachers that's an easy transition. For a lot of Technology teachers that hasn't been an easy transition. They're skill based practitioners 'follow me'. ... What you must remember is that they were employed as tradesmen who'd come through and done *some* (emphasised strongly) training to be able to join the workforce, but the workforce or the schools required practitioners who knew how to be a carpenter, how to be a joiner, how to be an engineer. ... The small hours of a dip C course, a one-year course, hardly any of it was given to professional development (Luke, interview one).

This statement clarified the situation for many Technology teachers finding themselves in an environment for which they were not prepared and directly influenced their ability to develop effective philosophies. Some already possessed the skills to be adaptable, and did. Those that did not adapt, were 'enabled to hide' within the system, as many school leaders saw their 'value set' for the skills they possessed, instead of the now required 'value set' of pedagogical understandings, which are now much more important.

This phenomena is discussed in the recently published government paper 'Learning to Learn in a Secondary Setting', Hipkins (2015) described how a swift change in the nature of subject specific dimensions, is unfamiliar to many teachers "whose own education probably did not include an explicit focus" (p. 6). This indicated understanding of the challenges teachers face in the gaps between their own training and expected 'deliverables'. Hipkins selected the secondary setting for the study as "the strong disciplinary nature and focus on 'high-stakes' assessment, appears to be counterproductive to the adoption of Learning to Learn strategies and can be perceived as a threat to long-held beliefs regarding practice". Participants agreed with this through frustrations around assessment and compliance policies demanding precedent over a

focus on teacher-learner relationship. Hipkins understands how this is ‘unsettling’ for teacher and explains a reluctance to change current practice when ‘high stakes assessments focus on traditional learning goals’.

Participants concurred with perceptions of desires to operate, grow and become more successful in a dynamic and collaborative approach with learners. In contrast, they believed expectations were to operate within an old construct of hierarchy, control, receiving little support from unions and senior managers. Data appeared to show, what they received in terms of educational philosophy, is in direct opposition to what they are expected to generate and lead. The literature around changes in the nature of leadership reflects this situation:

The agency of the educator/learner relationship is not now limited to teachers and students. Leadership roles too have adapted to now, sit aside the teacher-learner, as the promotion and participation in professional learning and development is shown to have the greatest impact (twice of other leadership dimensions) in raising student achievement (Robinson et al., 2009, p. 39).

Literature (Gilbert, 2005), (Fullen, 2001), (DuFour & Fullan, 2013), described the shifting nature of employment markets, and requires teachers and students to have a better understanding of this environment. The expert desired for ‘educators to get off the ‘Hipkins conveyor belt’, use TaI to step off and focus on transformational teaching and learning, supports this. He described how all teachers, not just leaders now need to understand what the learner experiences during transitions at entry and exit points. How they also needed to consult with tertiary, business, and industry needs and include pathways understandings implicitly in teaching programmes. Teachers needed to listen to what government is saying about economic challenges, and listen to parents, and community, as the expert reflects, ‘some are really struggling’.

One participant exemplified this ‘wide lens’ aspect by constantly relating learning activities to the world outside of school; by modelling the role of ‘the boss’ and what those expectations will be, he sees as his role in preparing students for that next stage in life. Participants agreed this is a vital aspect of their responsibilities. They shared understandings that “many of the entry and service roles become automated, within the next 5 years, our priority learners will have to face the prospect of not being employable” (Gilbert cited in Coleman, 2015) leaving just 4 years to adjust systems to support them. The authentic contexts easily accessible in the Technology learning area, are highlighted by the participant’s desire that their classroom practice links directly to learner experience after education, and is supported by Turnbull (2002).

5.4.2 Influences on Technology teacher-leadership

Data from teacher middle leaders indicated the nature of Technology teacher-leadership had developed significantly more complexity than is at first visible to other learning areas educational communities. This appeared to be further compounded by a vast and dynamic discipline resulting in the many secondary Technology teachers being in a significant leadership role of some form, whether formally acknowledged by title and remuneration, or not, even though this is provided for by the Ministry of Education via additional Technology funding. The dynamic disciplinary nature of the subject, applies a unique and changeable environment to the Technology learning area as a socially constructed and economically responsive context, not derived in an academic field but formed from multiple specialist industry related fields. This resulted in continual shifting of knowledge contexts, material developments, innovations, codes of compliance for safety, software updates, and results in a state of ‘continual administrative updating’, placing every Technology teacher with significant leadership responsibilities in an often isolated and misunderstood constant state of change. This study’s participants appear to

have deliberately accepted this challenge by seeking out external support sources, developing a philosophically deeper understanding, and data indicates, this centred on learner experience. Ironically, these findings suggest that by understanding the ‘new construct’, attempting to make the 2007 NZC visible for learners, has resulted in negative personal costs.

In line with increased need for collaboration and external support, participants welcomed national initiatives that attempt to break down traditional institution barriers, such as IES (Education, 2014b), and the move towards personalised PL&D. This study’s findings support the collaborative initiative of IES and express gratitude for the Ministry of Education’s shift in focus for PL&D delivery to become personalised.

5.5 Discussion Summary

This study aimed to respond to the research question: “What are the *facilitating conditions* that support Teaching as Inquiry (TaI) for Secondary Technology Teachers who are Middle Leaders in Greater Christchurch?” TaI appeared to represent the challenge of pedagogical change for classroom teachers and middle leaders to enable the NZC 2007 to become visible for 21st Century learners. This study aimed to provide insights into the lived realities for teachers and middle leaders who have attempted meet this challenge; what has enabled and inhibited their ability to achieve this change for themselves, the learners immediately surrounding them, and the influences of wider policy.

The nature of this systemic relationship is demonstrated using the functional and inter-dependent relationship of an eyeball in situ. The eye socket bone represents the supporting and potentially

transformational structure of wider policy, in which all learners exist. The eyeball represents the social setting of the school management and culture, sitting within but moving within the supporting structure, its nature firmly connected, but self-managing and independent. The iris and pupil could represent the individual learner, the small and ultimate purpose of the systems existence, which ‘sees’ and responds to external change immediately, creating unique learning experiences. Using the eyeball analogy, it is simple to understand how the changes made by teachers and middle leaders in their philosophical positioning, could be adaptive and responsive to changing learner need. How these separate but inextricably connected middle and senior leader philosophies create conflict when within the same social setting appears to be due to beliefs that they serve the same need. However, these educational philosophies have to be very different in nature due to one focussing on the learner ‘pedagogical philosophy’, and the other focussing on the infrastructure that accommodates the learner ‘administration and management philosophy’.



Figure 7: Eyeball as structural analogy [Eyeball Image link](#)

The inefficient and unresponsive perceptions may not mean that messages of communication between the three environments is broken. It may be that participants are holding vital priorities as known to be true for the participant, seen as required for the learner, that are in opposition to

the priorities held by school management and culture. It appears that it is at this junction of the system, that the biggest inhibitor or ‘barrier-brick wall’ exists for participants.

All participants expressed support, commitment, and alignment to the New Zealand Curriculum (NZC, 2007). The high school participants, appeared to hold the front half of the NZC as an embedded philosophical tool in their ways of ‘being’, their ‘self’, to access successful outcomes with learners, and view the NCEA data as just one tool, to analyse how effective they are with learners. Both high school teachers invested significant energy in the ‘transition-out’ stage for learners. This energy, involved communication after students left school via social media, making themselves available for advice and support about life at university, apprenticeships, even arranged and taking students to interviews with local businesses and tertiary providers to ensure the transition stage was supported. A comment from Alex around the meaning of personal excellence for some students illustrated how data for some students, particularly those with specific learning difficulties, did not benefit their ability to transition out of high school.

By reinforcing their strengths and sometimes **not** focussing on assessment, we can access a successful transition that builds on what they **can** do, not on what they can’t (Alex, interview one).

Alex’s comment highlights many important aspects of effective teacher philosophy. TaI within the self to use reflective strategies to inform responsive practice, is shown here as combined with; CRP traits in depth and genuine ‘knowing’ of learner needs, the philosophical position inclusive of ‘everyone matters’ social capacity, and the positively future focussed aspect of lifelong learning through recognition and celebration of individual personal excellence. All participants had developed shared and common beliefs relating to positional philosophies: Successful developed teacher philosophies, positioned the importance of the NZC vision, values, principles, key competencies, as first required to enable personal excellence resulting in the

‘plant flourishing’, and then able to be assessed against standards. Participants viewed colleagues focussing solely on assessment to guide teaching practice were missing the essential nutrients required for learning to occur: ‘doing’ the activity of learning as opposed to the learning becoming a connected aspect of themselves. In Luke’s words, described as, “You’re not measuring what the plant needs to be able to move to that point. You’re just saying you’ve got to point 2 and you’ve got 9 to go. No. It’s not a bullet point you tick, at all.”

The apparent conflict in priority between school leaders and curriculum leaders appears to generate from where the individuals and groups are directed by the developing nature of their roles. The curriculum leaders were focussing on curriculum design and delivery meeting learner needs, and then on connecting with, knowing the individual so that successful curriculum pedagogies become part of the learner. School leaders were directed to focus on achievement data in order that the Ministry of Education have an indication of school and system performance. What if this simple focus on achievement to evaluate and inform educational policy and spending, is damaging the learning that it is there to promote? Would it be possible for the two different educational philosophies to exist in support of the learner, and if they are both needed, is there a way that administrative and management philosophies can exist without personally damaging the ‘mana’ of the individuals who possess the desired TaI effective pedagogies? What if by focussing on achievement data as a 16-18 year old, we miss a key milestone of potential being realised later in life as a 30, 40, or 50 year old? How would school (and entire community) cultures differ, if they were to gather exit data as an indicator of the long-term effects of educational success, *ahead of* percentages indicating performance at just the adolescent stage? How about schools gather evidence on *where* learners go to after formal

education, *how* they become successful and connected citizens as adult, middle-aged, and older alumni members of society? Consideration of the long-term impacts of attending a particular secondary institution, being taught by, hopefully many great teachers, can be particularly influential 5, 10, or 20 years after leaving, depending on the life journey of that individual. With the use of social media to track school leavers, data could easily be collated and transferred to electronic student management systems such as Kamar⁴, enabling schools to analyse and inform the long-term impacts of educational developments, experienced during high school years. Perhaps then the aspirational vision of the NZC principles for each future New Zealand citizen to be ‘connected’, ‘confident’, ‘actively involved’, ‘lifelong learners’ can be analysed, if we collect that data, as opposed to just the final two or three years of formal schooling. Maybe this is one solution for education to be adaptive to change in the long-term, sustainably, by taking the long view in reflecting on usefulness of policies, systems, and financial support.

The potential to promote transformational human capacity is an aspirational goal that motivates the majority of teachers. It has the potential to increase quality of life, social and economic outputs. It is hoped this study can support conversations around how mind-set, adaptive expertise, experience, and deliberate attitudes, have developed philosophies that result in successful outcomes for students and colleagues, and how these ‘gap closing’ teachers (Safir, 2016) that probably exist in every school, have lessons for us all.

⁴ Kamar is a New Zealand student management system, software programme, including attendance, markbooks, and reports.

5.5.1 The Conditions for ‘Self’ - the ‘Nutrients’ for Developing Teacher Philosophy

Findings supported five conditions or nutrients, in the location of ‘self’, to meet individual needs of new construct pedagogical philosophies, involving in-service and pre-service PL&D of culturally responsive pedagogically based TaI. The ‘self’, aligned with the first stage of TaI, ‘focussing inquiry’, ‘what is important (and therefore worth spending time on), given where *learners* are at, and will help *me* learn?’

1. Individual, accountable, and compulsory, in-service PL&D focussing on culturally responsive pedagogies (CRP) as a foundation to access TaI effective pedagogies.
Enabling each secondary technology teacher the capability to form responsive, identity-based inquiry philosophies.
2. Personally responsive, accountable, and compulsory, pre-service PL&D focussing on culturally responsive pedagogies (CRP), as a foundation to access TaI effective pedagogies. Enabling each *potential* secondary technology teacher the capability to form responsive, identity-based inquiry philosophies.
3. Periodic system of business related ‘mutual’ secondment for every secondary teacher to swap with a business-training manager to spend time and gain current experience in a business and education of a related specialist field.
4. Strategic leadership support responsive to Middle Leader needs, internally provided by senior leaders and external sources, providing time, and professional guidance through CRP informed relationships to enable personal development pathways, which are mutually beneficial, to ensure *every* middle leader is performing at their best.

5. Strategic leadership support responsive to Technology teacher needs internally provided by middle leaders and external sources, providing time, and professional guidance to enable personal development pathways to ensure *every* teacher is performing at their best.

5.5.2 The Conditions for ‘Social’ - the ‘Fertiliser’ for Developing Teacher Philosophies

Findings generated a further eight conditions, or fertilisers, for TaI to exist successfully in a social location. These centred on increased collaborative ways of working: between teachers, between middle and senior leaders, between leaders and communities of learning outside the school, and finally realignment of achievement outcomes into a pedagogical context. As discovered with the location of ‘self’, ‘social’ aligned with the second stage of TaI, ‘teaching inquiry’, ‘what evidenced-based strategies will help us learn?’

6. Enable successful teachers to share strategies, mentor, and guide beginning or struggling teachers through regular timetabled support/learning sessions.
7. Enable the learning integration of pedagogical collaboration and shared decisions, realising (teacher via) middle leader needs, a priority, supported by administrators and senior leaders.
8. Enable teachers to form effective learning relationships, to ‘know’ each learner through; realistic class sizes, appropriate resourcing, administrative systems of data collection and analysis, flexible timetabling, and appropriate technician support.
9. Enable integration of Technology middle leaders into communities of learners (CoL), with the intention to share pedagogical strategies, and analysing long-term alumni exit

data, to inform, support, and strengthen clusters, linking across sectors of local education, business through mutual collaboration, iwi, tertiary providers, industry, and employers.

10. Pastoral leaders share pedagogical pastoral strategies perhaps offering positive parenting courses, with community whanau, collaborating with middle leaders, reenergising the collaborative, ‘it takes a village to raise a child’ philosophy.
11. Policy supporting periodic system of business and study related secondment for every teacher & business/industry leader to spend time and gain current, relevant experience in a business or industry related to their subject specialist field.
12. A system-wide shift of hierarchical structures and relationships positioning administrators in the role of routine logistical tasks, and experienced school senior leaders *in the service of* middle and teacher leaders. Through effective culturally responsive pedagogies (CRP), senior leader mentorship of middle leaders via ‘timetabled sessions’ to enable depth of knowing and a reciprocal culture of appraisal, professional learning, and development. Enabling a refocus on effective classroom pedagogies and effective professional relationships, centring educational focus with each learner and the New Zealand Curriculum. Related systems becoming reflexive and responsive to changing learner needs through cycles of continual review.
13. Pedagogical focus replace assessment focus, as driver of learning to enable shift to new construct. Celebration of every learner’s achievements during and at year-end, with criteria of personal excellence (using value-added as baseline data).

5.5.3 The Conditions for ‘Transformational’ Wider Policy - the ‘Flourishing’ environment for Developing Teacher Philosophies

Findings generated another seven conditions or ‘future flourishing’ in wider policy decisions. In the new construct pedagogies, participants understood and recognised how the long-term results of national decisions and initiatives, could cause, conflict, or prevent capability to effect required pedagogical change. These final conditions aligned with the third stage of TaI, ‘learning inquiry’, ‘what happened as a result of the teaching, and what are the implications for future teaching at a national, ‘transformational’ level?’

14. Positioning of assessment policies to support, rather than drive learning with a focus on transitional policies, cross-sector connection, contextual, authentic learning, personal excellence, and experiential progression.
15. Support for generation and roll out of simple modes of capture, a set of recommended, common ICT tools, aligned with in-school and regionally constructed data collection systems, of communication, reporting and review systems. This could reduce compliance and increase time efficiency, enhance coherence of learner experience within and between institutions whilst retaining institutional and community special character.
16. Support for generation and roll out of simple modes of administration, a set of recommended, common ICT system tools used to alleviate administration time spent within the roles of middle and senior leaders to enable focus on development and support of all learners.
17. Unions to align secondary teacher working conditions, and develop useful, efficient compliance processes to support identified under-performing teachers.

18. Support schools by developing regionally based support and reflective systems to realise opportunities for concentric improvement cycles for transformational and visionary leadership for all teacher-leaders. Increased support achieved both within and outside schools, regionally situated collaborative experts appointed through IES career pathways based within local Ministry offices re-opening direct lines of communication ensuring responsive, reflexive, and adaptive support systems.
19. Subject associations and cluster leaders to collaborate with ITE providers to ensure quality and consistent supply of specialist teacher availability regionally and nationally.
20. Increased counselling and mental health support services for all learners experiencing trauma.

5.6 Conclusion

All participants expressed support and understanding for the wider policy potential to transform environments to cater for 21st Century learners. They also saw immediate results in terms of positive student outcomes, within their own classrooms and their own teams of teachers if the supporting nutrients existed within the self of the teacher. The very real perceived ‘brick wall’ appeared when the learner moved into a social setting beyond that of the subject discipline within the school; relating to non-Technology specialist school management and culture.

Teaching as Inquiry with a secure foundation of culturally responsive pedagogies, is evidenced as able to exist within Technology teachers who are middle leaders. However, barriers appear within the self, as TaI cannot thrive without more understanding of diverse needs, and efficient systems of support coming from within and outside the school. This study has revealed one

crucial point. If the nutrients are not made available to the individual (self), in a timely and culturally appropriate manner, effective TaI pedagogies will never exist to benefit the learner, no matter how strong the collaborative ‘will’ of management at faculty, school level, region, and government level.

Undoubtedly, there exists a need for further research into this complex and intriguing area of pedagogical development. This study feels as if it has just scratched the surface of what can be understood, when investigating and implementing effective pedagogical systems.

BES recognises the gap in research around the roles of middle leaders at secondary level, described as:

The tension between the leadership and management aspects of their role is a recurring theme in New Zealand research on the work of principals. It is also an issue for middle managers, such as heads of department in secondary schools, but there has been little research into their roles (Robinson et al., 2009, p. 62).

The collaborative IES initiative certainly appears a step in the right direction. However, if the findings of this study are generalisable, the required ‘nutrients’ required in individuals in order for them to contribute successfully to the groups they belong, will not magically appear, by them forming into new groups. The nutrient need for effective inquiry pedagogies is outlined in Figure 8 and is first required at the individual level for *every* employed and registered teacher. The researcher suggests the above conditions enable TaI and recommends they become the focus for every classroom teacher, by being a ‘theory who travels’, adapting and responding to changing demands. TaI ‘research-bridge’ systems can be easily and efficiently created within and across schools regionally, connecting individuals, groups, clusters, and the wider system nationally.

Finally, if current educational uncertainty becomes accepted as a cycle of constant and responsive change, this study has indicated for those who ‘jump onto the change cycle’, produces positive outcomes for learners, but not sustainably yet, for themselves. What is certain, for some, they are indeed strong enough, in the short-term, to ‘push the huge truth boulders up the mountain side of mankind’s stupidity’ if action is taken to support the increasing ‘boulder weight’, that significant educational change can be used to the advantage of all learners, the well-being of communities, and the economic benefit of New Zealand.

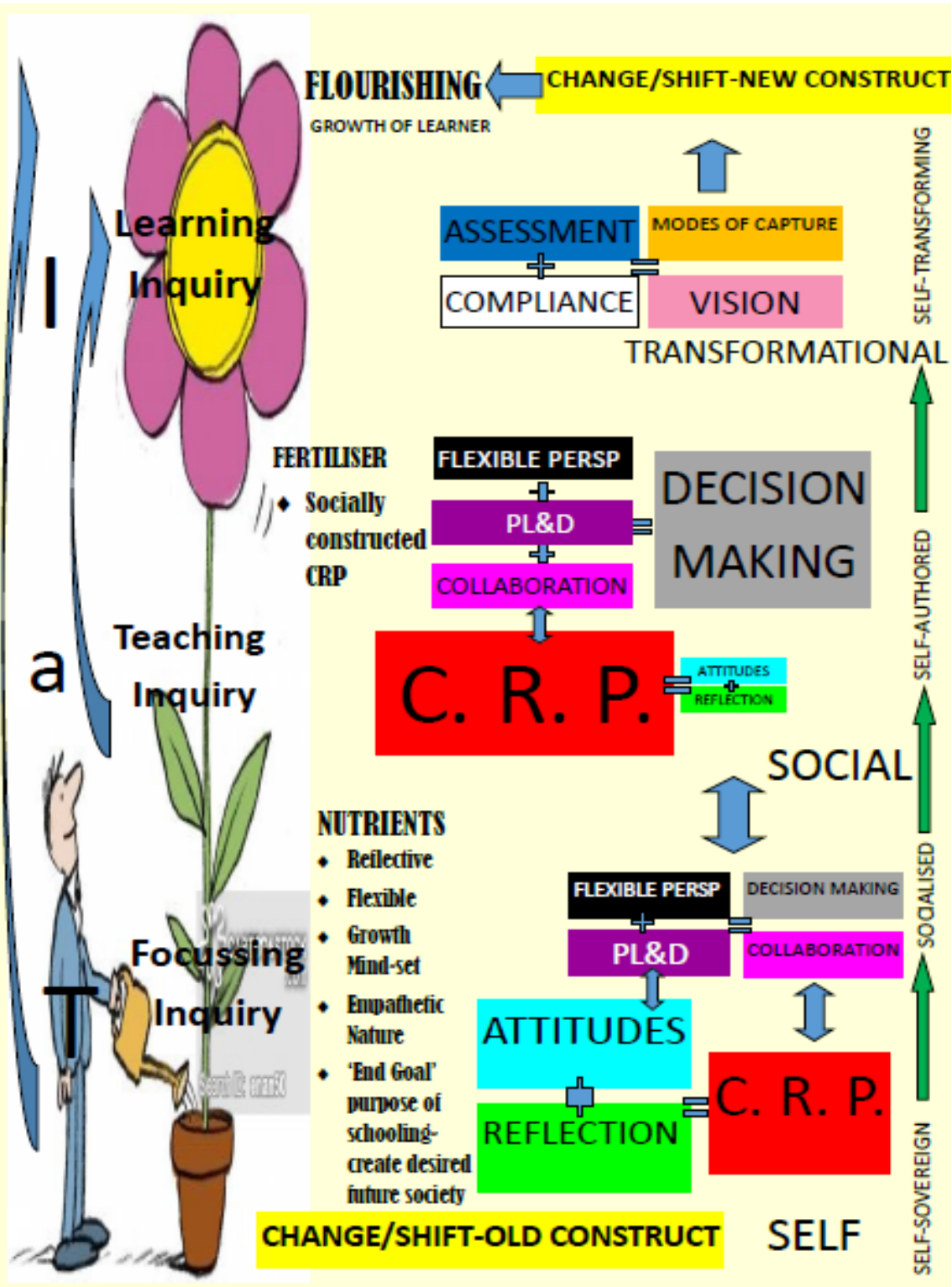


Figure 8: 'Watering the Flower' Visual

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Appendices

Appendix 1 Ethics approval letter



HUMAN ETHICS COMMITTEE

Secretary, Lynda Griffiths
Email: human-ethics@canterbury.ac.nz

Ref: 2015/27/ERHEC

17 September 2015

Catherine Johnson
College of Education, Health & Human Development
UNIVERSITY OF CANTERBURY

Dear Catherine

Thank you for providing the revised documents in support of your application to the Educational Research Human Ethics Committee. I am very pleased to inform you that your research proposal "What are the facilitating conditions that support teaching as inquiry?" has been granted ethical approval.

Please note that this approval is subject to the incorporation of the amendments you have provided in your emails dated 5, 8 and 16 September 2015.

Should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval, please let me know.

We wish you well for your research.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Nicola Surtees'.

Nicola Surtees
Chair
Educational Research Human Ethics Committee

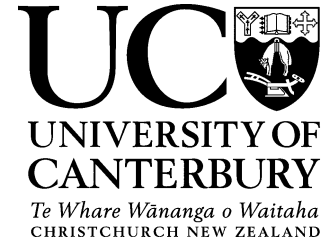
"Please note that Ethical Approval and/or Clearance relates only to the ethical elements of the relationship between the researcher, research participants and other stakeholders. The granting of approval or clearance by the Ethical Clearance Committee should not be interpreted as comment on the methodology, legality, value or any other matters relating to this research."

F E S

Appendix 2: Participant consent form

Telephone: +64 27 6315 323

Email: catherinejohnson40@gmail.com



What are the *facilitating conditions* that support Teaching As Inquiry (TAI)?

Consent Form for Teachers

I have been given a full explanation of this project and have been given an opportunity to ask questions.

I understand what will be required of me if I agree to take part in this project.

I understand that my participation is voluntary and that I may withdraw at any stage without penalty.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me.

I understand that all data collected for this study will be kept in locked and secure facilities at the researcher's home and will be destroyed after five years.

I understand that I can request transcripts from my recorded interviews, and I will receive a report on the findings of this study. I have provided my email details below for this.

I understand that if I require further information I can contact the researcher, Catherine Johnson. If I have any complaints, I can contact Dr Wendy Fox-Turnbull (wendy.fox-turnbull@canterbury.ac.nz) or the Chair of the University of Canterbury Educational Research Human Ethics Committee.

By signing below, I agree to participate in this research project.

Name: _____

Date: _____

Signature: _____

Email address: _____

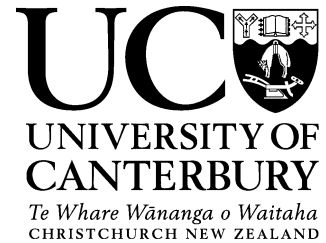
Please return this completed consent form to me via email by 10th November 2015.

Appendix 3 Consent letter

Telephone: +64 27 6315 323

Email: catherinejohnson40@gmail.com

20th July 2015



What *facilitating conditions* best support Teaching As Inquiry (TAI)?

Information Sheet for Teachers

Kia Ora,

My name is Catherine Johnson, I am a Head of Faculty Technology at a large high school in Canterbury, and have 20 years Technology teaching experience. I have participated in research in 2008, and have completed a pilot research project with the centre for educational research, NZCER exploring what the future of schools looks like in New Zealand 2012. I am currently on a study leave award from TEACHNZ for 2015 and wish to identify what the facilitating conditions for Teachings As Inquiry (TAI) are for teachers.

I would like to invite you to participate in my study. I have selected you as we are known to each other professionally, and aspects of your professional activity are of interest in my study of Teaching As Inquiry. I wish to learn more from you; about what experience and habits or mind-sets lead to support the positive outcomes you enable with students. If you agree to take part, you will be asked to do the following:

- Be interviewed on two separate occasions at a venue of your choice. Ideally in a relaxed and informal setting, **other than** the workplace, as this study is interested in exploring your individual experiences, characteristics and choices, and does **not** require observation of professional practice, or any contact with students or with your place of work.
- You will be asked a set of questions covering themes that are of interest in this study. These are designed to guide the discussion rather than be strictly adhered to. This semi-structured discussion is expected to take between 40 and 60 minutes. It will be voice recorded and you are able to direct the control of that recording if you wish.

- After the first interview and before the second will be a space of around 10-14 days. During this time, you are invited to keep a 'reflections diary' of your thoughts and ideas around the discussion of the first interview. You will be supplied with a notebook and the planned questions from interview one, to support ongoing reflections. These reflections will be useful for the second interview, to enable a progressive discussion.

Please note that participation in this study is voluntary. If you do participate, you have the right to withdraw from the study at any time without penalty. If you withdraw, I will do my best to remove any information relating to you, provided this is practically achievable. I will take particular care to ensure the confidentiality of all data gathered for this study. Your names will not be used in any part of the writing activity nor will the school/locality of your practice be disclosed. I will also take care to ensure your anonymity in publications of the findings. The region of Greater Christchurch is specific to this study and is the only reference to physicality that will be made.

All the data, including the interview voice recordings, will be securely stored in password-protected facilities and locked storage at my home for five years following the study. It will then be destroyed. Transcription of interviews will be available for review by the participants and a copy provided on request. All thesis produced as part of Master's degree, become open and public documents, and will be available on the University of Canterbury's library database. The results of this research may be used to revise and improve programmes of professional learning and development within the scope of my on-going professional activity. The Senior Analyst at the Ministry of Education, Paul Aitken, has provided background information and support concerning the Investing in Educational Success (IES) initiative, and has requested that a copy of the completed thesis be sent on completion. The TEACHNZ offices in Wellington will receive a copy as it was their award that enabled this study. The results may also be reported at conferences, and in teaching journals, following the advice of my supervisors. All participants will receive a report on the study.

If you have any questions about the study, please contact me (details above). If you have a complaint about the study, you may contact either my supervisor, Dr Wendy Fox-Turnbull (wendy.fox-turnbull@canterbury.ac.nz) or the Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in this study, please complete the attached consent form and return it to me via email by 10th November 2015. I anticipate the first interview to be sometime commencing beginning of October 2015, interview 2 to be late October early November 2015.

Thank you for considering taking part in this research.

Catherine Johnson

Appendix 4 Visual versions...

Visual 1

