Teaching as Inquiry: form, purpose and application in New Zealand Secondary Schools

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Abstract

Teaching as Inquiry is described as a component of effective pedagogy and is being used in New Zealand Secondary Schools as a means of professionally developing teachers and also as a process for teacher evaluation. This appears to be a difficult and complex undertaking for both teachers and leaders due to variation among New Zealand Secondary Schools as to their understanding and practice. This study therefore aimed to find out in what form, and for what purpose, New Zealand Secondary Schools implement Teaching as Inquiry, along with finding out the implications of its practice.

A qualitative approach was taken to this study and involved two methods. Firstly, documentary analysis was used to gain a contextual background of Teaching as Inquiry in the school policy landscape. Secondly, interviews were carried out with teachers and middle and senior leaders to investigate the perceptions and thoughts of individuals from different levels of the secondary school hierarchy. The key findings revealed that there is variation within and between schools in how the model is interpreted and subsequently implemented. For example, differences occur in its perceived purpose, what it is applied to, how it is applied and to what depth. It is argued by the researcher that this variation is caused by a lack of understanding of the true intentions of the Teaching as Inquiry model. In addition, Teaching as Inquiry has become linked to school performance management processes, a move which encounters problems to do with balancing the original intentions of Teaching as Inquiry such as professional freedom and openness with the demands of an outcomes driven appraisal system. It is the belief of the researcher that schools need take a step back and revisit the original intentions of the model and review its purpose within schools. School leaders need to examine how they currently link the Teaching as Inquiry model to appraisal and overall school improvement. This study suggests that schools need to make Teaching as Inquiry a more robust, valued and essential component of school, faculty and individual teacher self-review. This requires leaders to develop and support teachers through policies and processes to become users of the Teaching as Inquiry process in accordance with its original intention.
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Chapter One

Introduction

In my setting, I am a classroom teacher in a New Zealand secondary school. In addition to this role, I coach teachers across the school in applying a model of reflective practice called Teaching as Inquiry. This role emerged because the school in which I work would like teachers to become competent users of this model, as it is their belief that this will lead to teachers becoming more effective in the classroom and lead to improved achievement of students. The reason the school believes this model will improve teachers’ effectiveness is because it is presented in the New Zealand Curriculum as a component of effective pedagogy. If all staff across the school could apply this model, then it is their belief that that this will contribute to raising the whole school’s achievement. Several models similar to Teaching as Inquiry exist. However, this model has been adopted due its presence in the New Zealand Curriculum, a document on which the school bases its style of teaching. The model aims to help teachers understand the needs of their students. By doing so, teachers can make adjustments to their practice so that those needs are met. Day to day, I work with individual teachers to first of all help them to understand the Teaching as Inquiry model in terms of its aim and its components and, secondly, to help teachers apply it in their individual classroom settings.

The school applies the Teaching as Inquiry model for another reason. Appraisal is part of a school’s legislative obligation to manage the performance of teachers. This involves two important aspects: one is professionally developing teachers to make them more effective in the classroom, and the other is an accountability aspect, which monitors the performance of teachers so that minimum standards of teaching are met. The professional development aspect of appraisal is intended to improve the quality of teaching and learning so that the school may be able to meet its performance goals. The accountability aspect involves teachers’ performance being evaluated against two sets of criteria. The first is a set of professional standards for teachers is based on the government’s expectation for performance and the second is a set of criteria provided by the Education Council for teachers to gain or renew their practicing certificate. The school in which I work has
recognised that, by applying the Teaching as Inquiry model to improve teacher performance, it can also be used to meet the professional development side of appraisal. As a result, applying the Teaching as Inquiry model is effectively killing two birds with one stone.

The experience I face when meeting with teachers to discuss Teaching as Inquiry is that there are clearly gaps in teachers' and middle leaders' knowledge about the meaning of the model in terms of what the model’s purpose is and how it can be practically implemented. This has led to staff discussions having several conflicting and confusing aspects for both for teachers, middle leaders and for myself. First of all, teachers need to have the model broken down and explained to them by exploring the various components in a practical way so that they understand what is required of them. Secondly, teachers are often confused between what serves an appraisal purpose or a professional development purpose. This confusion has influenced how they view the model. For example, teachers often refer to Teaching as Inquiry in terms of a project. This is reflected in comments such as ‘I haven't done my inquiry yet’. Furthermore, teachers often fail to see the link it has with appraisal in terms of what they are accountable for. For example, is accountability derived from simply carrying out a cycle of inquiry, or from the students' achievement resulting from applying the model? I also repeatedly come across teachers who are not familiar with how Teaching as Inquiry can be carried out. They are unsure where and how to begin inquiry. Consequently, the components of the model need careful unpacking for teachers, who often simply want to know what is required of them in terms of what they should be doing and when.

It is these interactions with teachers and middle leaders that have become a catalyst for this study. For example, teachers can often see the benefits of implementing the model as a means of attempting new pedagogy, perhaps leading to an improvement in their practice and increasing student achievement. However, our conversations are often shadowed by teachers realising that their actions will also be recorded and judged in accordance with appraisal practices. Therefore, tensions between myself and teachers arise. On one hand, I am attempting to enable teachers to apply the Teaching as Inquiry model and take a risk in trying new approaches to their teaching, but on the other hand, both the teachers and myself are aware that the teachers’ actions will be held accountable in a separate interaction with an appraiser in relation to a model they have limited knowledge in how to implement. In summary, my role involves balancing the implementation of Teaching as Inquiry in a
secondary school context, as a democratic mechanism for teachers to modify their own practice, against the model's use as means of evaluating teachers' performance.

**Background**

Teaching is becoming a more complex activity as society in general becomes more complex (Reid, 2004). Complexity can be found in the increasingly diverse needs of students, as well as changing curriculum design, approaches to how students are assessed, as well the introduction of new technologies into the classroom. Alongside this is the fact that classrooms and schools have different contexts, for social, political and economic reasons. As a result, several authors (Aitken & Sinnema, 2008; Babione, 2015; Benade, 2014; Reid, 2004; Timperley, Wilson, Barrar, & Fung, 2007) contend that there is no single method for meeting the challenges a complex teaching environment presents and so an inquiry approach is suggested as a method teachers can use to manage this complexity. The concept of inquiry involves “researching practice and seeking information” (Robertson, 2005, p. 5), the purpose of which is to find out which ways of teaching students work best in any given situation. In the context of a classroom teacher’s practice, inquiry is described as a systematic process (Cochran-Smith & Lytle, 1993; Gordon, 2004). Inquiry is also an activity that is “intentional by teachers about their own school and classroom practice” (Cochran-Smith & Lytle, 1993, p. 17). Inquiry can therefore be considered as a deliberate, organised and methodical process. Reid (2004) adds that inquiry is a critical process, rigorous and context bound. The concept of inquiry has been in education circles for many years, and many models of inquiry have been developed. However, Teaching as Inquiry is one of the more recent models of inquiry.

The Teaching as Inquiry model (figure 2.1) is outlined in the New Zealand Curriculum (Ministry of Education, 2007). The purpose of the model according to the document is for teachers to “inquire into the teaching and learning relationship” (Ministry of Education, 2007, p.34) and its context is part of a section of the curriculum entitled ‘Effective Pedagogy’. The basic premise of the model is to improve the outcomes of all students through the provision of a framework for teachers to gain greater knowledge about the impact of their teaching on students and to subsequently be used to improve their practice. The model's origins are derived from research by Aitken and Sinnema (2008) who synthesised a Best Evidence
Synthesis using evidence from research into the social sciences to form a model of evidence-informed pedagogy they called Teaching as Inquiry. It became a solution to the problems posed in the research of “what teaching approaches enhance outcomes for diverse learners in the curriculum area of social studies, and how and why are these effects happening?” (Aitken & Sinnema, 2008, p. 25). The model was incorporated into the New Zealand Curriculum, which was being revised throughout the early half of 2000s, as a means of effective pedagogy.

Since the publication of the New Zealand Curriculum in 2007, the model’s prominence has been fuelled by other research. For example, a study called School leadership and student outcomes: what works best: Best Evidence Synthesis (BES) (Robinson, Hohepa, & Lloyd, 2009) aimed to find out in what ways leadership can best influence student achievement. It found that the most effective form of leadership was that of pedagogical leadership, described as “close involvement by leadership in establishing an academic mission, monitoring and providing feedback on teaching and learning, and promoting professional development” (Robinson et al., 2009, p. 88). In other words, leadership is most effective when leaders become actively involved in the learning process of teachers. Teaching as Inquiry was seen as a way of putting into practice the notion of leaders assisting the professional learning of teachers by becoming more involved in their practice.

In addition to the model’s implementation as a component of effective classroom practice, the Education Review Office (2014) found that many schools are using the Teaching as Inquiry model as a process for appraisal, coupling the evidence derived from inquiry with the accountability framework of the Practicing Teacher Criteria. This shift in emphasis has been encouraged by research which highlights the benefit of an inquiry approach to the developmental side of appraisal. For example, Sinnema (2005) suggests that evidence about student outcomes can be a focal point on which to base appraisal. This evidence can be sought by using an inquiry approach and finding out the learning needs of students, which in turn decides the professional learning needs of the teacher. This has led to the concept of appraisal for teacher learning. Taking an inquiry stance in evaluation practices is supported by Sinnema and Robinson (2007) and, for it to be effective, “appraisal processes should be grounded in priorities for student learning” (Sinnema & Aitken, 2011, p. 43). Furthermore, a report by the Education Review Office in 2011 recommended that schools
incorporate Teaching as Inquiry into their performance management systems and this report has now been adopted widely among schools into the framework for evaluating teachers in appraisal (Education Review Office, 2014).

**Rationale**

In my role, I have experienced a problem whereby Teaching as Inquiry is being positioned as a tool to meet two important school activities. On the one hand, implementing Teaching as Inquiry is portrayed in the literature as a means for highlighting the professional development needs of teachers. On the other hand, it is also being used as a process for evaluation of teachers’ effectiveness. Added to this problem is a continuous encounter with both teachers and leaders who have limited knowledge and understanding of the model. This creates tension as schools attempt to satisfactorily carry out two significant features of school activity using a single mechanism. As a result, I believe I am caught up in the momentum of an increasing demand for the greater and more widespread use of Teaching as Inquiry, whilst at the same time dealing with the debris of its misunderstandings and misuse.

This misunderstanding is confirmed by a report by the Education Review Office (2014), which found that schools generally found it easier to set up and monitor systems and processes to ensure teachers were compliant with the accountability aspects of appraisal criteria, rather than to achieve those that promoted teacher development. The report suggests that teacher development in relation to Teaching as Inquiry should increase teachers’ capabilities to apply the model of inquiry in their own classroom contexts, but also to understand how the results of applying the Teaching as Inquiry model are distinct from the results of appraisal (Education Review Office, 2014).

Capability in the context of Teaching as Inquiry is related to the skills required to be able to carry it out effectively and independently. Attempts to implement school wide practices of inquiry often lead to insufficient development of capabilities (Alton-Lee, 2011). Developing capabilities requires teachers to be developed as professionals. Professionalism, according to Nelson and Slavit (2008) is built on trust, openness, positive relationships and
collaboration. What schools are perhaps finding difficult is to balance the inherent accountability mandated in appraisal with the professionalism of the inquiry model. The underlying essence of inquiry embraces ideas of professionalism contained within educational values, such as intrinsic motivation and moral agency. These are described by Aitken and Sinnema (2008) as “openness, fallibility and persistence” (p.53). According to Codd (2005) these essences fail to exist in processes that have external accountability requirements.

The inability of the Teaching as Inquiry model to enable professional learning of teachers is confirmed by Benade (2014). He justifies this by pointing out that those essences stated by Sinemma and Aitken are attitudes that underpin the founding model in the Social Sciences BES (2008), are missing from the Teaching as Inquiry model as it stands in the New Zealand Curriculum. As a result, it renders the Teaching as Inquiry model a shallow and limited model that falls short as a means to effectively reflect on practice. Consequently, its use is unlikely to elicit learning in teachers, as they often fail to learn the pedagogical principles and norms from the reform. This can lead to inquiry practices that are more of a one-off project, rather than an important part of professional practice (Timperley et al., 2014). A concept associated with only superficial change is that of over-assimilation. Over-assimilation is the implementation of some of the features of the professional learning, leaving behind an unmodified set of core teaching strategies (Timperley et al., 2007)

Reflective practice, according to Benade (2014), is a concept he describes as “the on-going, regular and persistent use of reflective tools to engage, individually and collectively, in critical thinking about various aspects of practice” (p.4). Benade’s work has major implications for schools and especially school leaders. For example, leaders may be pinning their hopes of school improvement on a model that has holes in its ability to develop teachers in the way schools need to in order to meet the diverse needs of students and to contribute towards improved achievement. Furthermore, where Teaching as Inquiry is being applied in appraisal, leaders need to understand the potential limitations of the model as a tool for accurately evaluating teachers’ performance. Since it is the requirement of all New Zealand secondary schools to adopt the New Zealand Curriculum in their own settings, it is crucial that further investigation is made into how application of models of reflective practice contributes to individual and school improvement.
Research aims

As a result of the problem stated above, I am therefore interested in finding out in what forms, and for what purpose, schools have implemented the Teaching as Inquiry model. I would also like to find out how schools have positioned the Teaching as Inquiry model within the dual purpose of appraisal. Schools that were classed as effective had a deep understanding of self-review, such as in the form of Teaching as Inquiry. I would therefore also like to find out what are the enabling factors that lead to a deeper understanding of Teaching as Inquiry. These are:

1. To examine the forms and purposes of a ‘teaching as inquiry’ process model in two New Zealand secondary school practices
2. To investigate why and how these schools apply a ‘teaching as inquiry’ model
3. To identify factors that prevent and enable the implementation of a ‘teaching as inquiry’ process model in New Zealand Secondary Schools.

Research questions:

The research in this study is based on three main questions. These are:

1. In what forms and for what purpose do New Zealand Secondary Schools use a ‘teaching as inquiry’ process model?
2. How is the ‘teaching as inquiry’ process model applied in New Zealand Secondary Schools?
3. What are the factors that prevent and enable the implementation of a ‘teaching as inquiry’ process model in New Zealand Secondary Schools?

Thesis outline

This thesis is divided into five chapters. The first chapter introduces the study and presents Teaching as Inquiry as a significant and contentious educational problem currently occurring in New Zealand secondary schools. The problem is articulated as a growing tension
between secondary school leaders and teachers as they interpret and implement the Teaching as Inquiry model. Misunderstandings and misinterpretations of guiding documentation has led to differences in how they teachers and leaders perceive what form the model should take as well what is applied to. The problem is justified as significant due its topical nature and the urgency needed in its research. Subsequently, an outline of the research aims and questions are presented.

The second chapter presents the literature base relevant to this study. This is carried out under five main themes that the literature relates to. These are: Models of reflective practice; Teaching as Inquiry as a means of professional development; Teaching as Inquiry as a means of school development; Teaching as Inquiry and appraisal; and finally, Teaching as Inquiry and the Leadership of learning.

Chapter three describes the design of the research by outlining the methodology, the methods used and the form of sampling used. Chapter three also describes how the data was analysed and how validity and reliability were addressed. Finally, I have described how ethical issues were attended to throughout the research.

Chapter four presents the findings from the data, beginning with an analysis of the documentary evidence followed by the findings from interview data. Throughout chapter four, key findings are used to summarise and emphasise the key points raised.

Chapter five discusses the key findings against the literature base given in chapter two. This is followed by concluding the research and providing key recommendations for school leaders as a direct result of this research. Finally, the study ends by highlighting the limitations of this study and suggest future areas for research.
Chapter Two
Literature review

Introduction

This literature review is arranged into four sections according to the themes that emerge from the literature. In the first section, I will begin by discussing the concept of inquiry in relation to a teacher’s classroom practice and why it is promoted in schools as a component of effective pedagogy. I will then describe the Teaching as Inquiry model found in the New Zealand Curriculum and then describe several other forms of inquiry found in the literature base. This is followed by comparing and contrasting the various models in terms of their features and their intended purpose. Secondly, I will consider how Teaching as Inquiry contributes to a teacher’s professional development by discussing its role in promoting teacher learning and its ability to initiate changes to classroom practice. Thirdly, I will then critique the links between Teaching as Inquiry and teacher performance management processes. Fourthly, I will explain how the role of Teaching as Inquiry can contribute towards overall school development and finish by highlighting the importance and nature of leadership activity in relation to Teaching as Inquiry.

Models of reflective practice

Effective teaching has traditionally held the premise that good teachers have a particular style. Over the years, this premise has become more embedded being passed down from leaders in a discourse that uses top down systems of passing on knowledge about teaching and learning (Sinnema & Robinson, 2007). This kind of discourse ignores the role that teachers play in shaping the learning that goes on in their classrooms and fails to acknowledge that teachers are professional at heart (Benade, 2008). Descriptions of effective teaching also ignore the concept that teaching is a socially constructed phenomena that is contextually located, with the teacher as an active component. Any attempt to prescribe effective teaching needs to include the teacher as a key determinant in the creation and subsequent use of knowledge that describes what is and what isn’t effective in any given setting (Hong & Lawrence, 2011).
The concept of inquiry

Classroom inquiry practices have been advocated in several ways: as a means for teachers to better understand their own setting (Hong & Lawrence, 2011); for improving learning in schools (Connor & Greenwood, 2008; Robinson & Lai, 2006); and even proposed as a mechanism for school transformation (Timperley, Kaser, & Halbert, 2014). The work of Connor and Greenwood (2008) partially supports this, as they report that teachers’ use of inquiry led to “better understandings of what happened in their classrooms” (p.72). Inquiry has become a mechanism for personalising professional development and has allowed teachers to address the increasingly demanding issue of greater diversity in their classrooms through meeting the individual unique needs of students (Darling-Hammond, 2000).

The concept of inquiry involves the review of a teacher’s classroom practice. An individual teacher’s practice can be considered as a set of problems or issues. Problems can be thought of as a discrepancy between what is currently going on and what is desired. Classroom problems have many possible solutions (Robinson & Lai, 2006). For whichever solution teachers use in their classrooms, an inquiry approach encourages teachers to collect, and reflect on, evidence about the effectiveness of their own choice of solution to classroom problems. Inquiry can also be thought of as understanding the problem better, rather than necessarily being able to solve it completely (Hall 2009). Inherent in the task of going about solving classroom problems is the concept of teachers themselves learning. Learning is increasingly called upon as an important component of teachers’ work as they become problem solvers in their own setting (Hong & Lawrence, 2011). This is justified by Sergiovanni (2001), who makes the link that if improvements in student learning are to be expected, then learning must also occur in adults. Teachers are faced with increasingly complex classroom situations, and so the kind of learning that teachers need to engage with is that which requires critical thinking and creativity (Codd, 2005). Reid (2004) echoes this assertion by stating that if we are to develop certain learning dispositions associated with critical thinking and creativity in students, then they must be modelled by educators also. The importance of critical thinking and creativity may be considered necessary to the process of inquiry, as teachers often struggle to change their practice because they do not know what to replace current practice with (Robinson 2006). Therefore the aim of inquiry is to encourage teachers to be able to uncover the pedagogical content knowledge and skills necessary for generating desired student outcomes. (Timperley et al., 2007). Finding new kinds of practice is a key element of inquiry, described as “active experimentation” (Babione,
In summary, inquiry can be considered as a learning based process employed by teachers to attend to dynamic and ever changing classroom scenarios. Central to the learning process is thinking in a critical and creative way. Models of inquiry provide a platform for teachers to organise inquiry into an orderly activity of reflection. For the rest of chapter two, I will refer to the broad concept of teachers inquiring into their practice as practitioner inquiry.

Models of inquiry
There are several recent models of inquiry found in education, such as Teaching as Inquiry (Ministry of Education, 2007), problem based methodology (Robinson and Lai, 2006), action research (Cardno, 2003), action enquiry (Harris 2002) and, more recently, a spiral of inquiry is suggested by (Timperley et al., 2014). It is important for this study to begin the literature review with a discussion of the different forms of practitioner inquiry. The form of practitioner inquiry is a major theme in this study and discussion here will help provide clarity later in the study when discussing the form of practitioner inquiry schools have adopted.

A model known as Teaching as Inquiry was outlined by the Ministry of Education (2007), and is shown in figure 2.1, and originated from the Best Evidence Synthesis on Social Science (2008). The context of the model is that it is positioned in the New Zealand Curriculum as a component of effective pedagogy for the purpose of teachers to inquire into the impact of their practice. The process begins with a stage called the focusing inquiry whereby data is used to highlight student needs by finding out what students have learnt and what they need to learn next. The second stage of the model is called the teaching inquiry phase and requires teachers to select the most appropriate strategy to meet the needs of students identified in the previous stage. Selecting appropriate strategies is a process of deciding which approach is most appropriate in relation to the needs of students highlighted in the data and also that of research. Finally, the learning inquiry phase involves reflecting on the previous two phases of the cycle. In this phase, teachers use different forms of assessment to gauge the success of the particular teaching strategies used. This should happen as an ongoing process, but also occur at the end of a teaching cycle, such as a unit of work (Ministry of Education, 2007).
Closely related to the Teaching as Inquiry model is another model described by Aitken and Sinnema (2008) and outlined in the Social Sciences Best Evidence Synthesis (2008). They also call it Teaching as Inquiry and is shown in figure 2.2. The model is important to this study because it was used as a basis for the Teaching as Inquiry model in the New Zealand Curriculum. Although very similar, there are differences between them and it is important to this study at this point to highlight them so that those differences can be drawn on later in chapter five. Its purpose is described in the Best Evidence Synthesis on Social Science (2008) as a mechanism used to “identify and explain teaching approaches that enhance outcomes for diverse learners in the domain of social sciences / tikanga à iwi” (Aitken & Sinnema, 2008, p. 221). In other words, by applying the Teaching as Inquiry model in figure 2.2, teachers can find out what teaching approaches work best in any given situation. This approach contrasts with more traditional approaches which focused on curriculum coverage (Sinnema & Aitken, 2011). First of all, the Teaching as Inquiry cycle in figure 2.2 expands on the Teaching as Inquiry model in figure 2.1 in several ways. Firstly, it describes how student needs identified in the focusing inquiry are derived from not only the teacher’s perspective about what students have learnt, but from a variety of sources, such as curriculum requirements, community expectations and student interests. Secondly, during
the *teaching inquiry* phase, the model requires teachers to first of all locate evidence and then evaluate the quality of evidence used to inform changes to teaching practice. Finally, the *learning inquiry* phase involves finding out not only the effect of those strategies from the students’ perspective, but also the reasons behind the effects. A key difference between the two models is that the latter calls on metacognitive skills at each stage to reflect and evaluate teachers’ ideas. For example, in the *teaching inquiry* phase, the evidence used to inform the selection of teaching strategies needs to be questioned in terms of its sufficiency and its meaning, so that a more accurate conclusion can be drawn as to what the data shows. To help teachers interpret what the evidence is showing, a set of four mechanisms are provided to help teachers explain the evidence. These are under the headings of connection, alignment, community and interest. Although they do not necessarily prescribe answers, they intend to frame teachers’ thoughts and allow possible answers to emerge.

Finally, the authors make it clear that the version of Teaching as Inquiry in figure 2.2 should not be perceived as a mechanism for action. Rather, it is a means of constructing knowledge and enabling teacher learning. They emphasise that Teaching as Inquiry should unearth and pose more problems than it should generate answers. In other words, the model should promote new ways of thinking and be thought provoking, as opposed to an apathetic, mechanism of change. In order to take this approach, a common and underlying themes throughout the model are the teacher dispositions of “openness, fallibility and persistence” (Aitken & Sinnema, 2008, p. 53). Openness refers to the ability for teachers to consider new ways of teaching perhaps not already thought of. Fallibility considers the way evidence is perceived, in that it should not be looked at as empirical. This is due to the way evidence in social situations is constructed. Finally, persistence is a result of the fallibility of the evidence and that teachers must continue the inquiry process in light of new contexts.

A similar model is proposed by Timperley et al. (2007) in figure 2.3 and is found in the Teacher Learning and Professional Development Best Evidence Synthesis (2007). They call the model a Teacher Inquiry and knowledge building cycle. Similar to the cycles in figure 2.1 and figure 2.2, this cycle is based on finding out students’ learning needs. However, the authors emphasise the need for learning to emerge from teachers working independently and collectively to understand classroom issues. The model also adds another step in
comparison to 2.1. Rather than moving straight from the identification of student needs to corresponding strategies, 2.3, Teacher Inquiry and knowledge building cycle, highlights the need for teachers to be able to identify their own learning needs prior to the formation of new strategies.

Figure 2.2: Teacher Inquiry and knowledge building cycle
Source: Aitken and Sinnema (2008)

This is achieved through working collaboratively with colleagues to help teachers engage in higher level thinking and engaging with their existing knowledge and skills before intervention takes place. The authors promote this feature of the model as a key step in enabling teachers to take control of their own learning and actions. This is important, as the way teachers interpret student data is often dependent on their previous experience and understanding, as well as their specific situation (Timperley et al., 2007).
Figure 2.3: Teacher inquiry and knowledge building cycle to promote valued student outcomes.

Source: (Timperley et al., 2007, pg, X1iii)

Finally, of benefit to this discussion is including the process of action research, as shown in figure 2.4. The researcher has decided to include it in this discussion due to its contribution towards the overall concept of inquiry. Like the previous models, action research is embedded in context and practical in nature (Cardno, 2003). A key concept of action research is like the title suggests, that an action will be taken to address an issue or problem and bring about improvement. The process of action research goes through phases of reconnaissance intervention and evaluation.
Reconnaissance involves exploring an issue using data from many perspectives to make use of all available information, including discussion with colleagues as well as from empirical research. An intervention involves implementing a new strategy, with the evaluation being an evidence based review of the intervention. Several key differences are emphasised between action research and the other forms of practitioner inquiry discussed earlier. First of all, a fundamental part of action research is that it makes use of collaborative practices with others, such as colleagues or researchers, to achieve a deep understanding of the issue. Furthermore, other people become more active in the action research process.

**Figure 2.4: Action Research**

Source: Cardno, 2003, p. 12

Secondly, unlike the previous models that are described in relation to individual classrooms, action research can be applied “within the classroom, across the school, or in the management of the organisation (Cardno, 2003, p. 1). Thirdly, action research is spiral in nature. For example, once a particular issue becomes addressed, new aspects of the problem may emerge. These may be new, or related to the original problem, and so the model also allows for addressing other concerns that may need to be tackled on the way to addressing the main issue.
When comparing the above three models, a key difference between them is that, although all three models constantly use student information to inform the inquiry process, the models in figure 2.2 and 2.3 emphasise the use of metacognitive processes by teachers to better understand what the data is showing. This approach questions the way in which teachers look at data and consider how data could be perceived from other perspectives not previously considered by the teacher. Also, the authors of the model in figure 2.2 highlight the need for creativity, first of all in the form of assessment data used to highlight student learning, and also in new ways of teaching.

The importance of demarcating the differences between the above models is highlighted by the work of Benade (2014) in that the form inquiry takes has implications for its practice. He critiques the form of Teaching as Inquiry in figure 2.1 as an effective form of practitioner inquiry. Effectiveness is derived from the model’s ability to promote a form of practitioner inquiry that is deeply reflective, collaborative and critical. First of all he points out the emphasis Teaching as Inquiry places on the actions of the individual, where the teacher themselves become the stimulus for each step. Sinnema and Aitken (2011) state that Teaching as Inquiry does not necessarily need the element of collaboration. However, Benade (2014) stresses the idea that working with others is a fundamental part of the learning process. He cites the seminal work of Argyris and Shon (1974) in highlighting that it is only when teachers openly discuss their thought processes with others that new ideas can emerge. Secondly, there are subtle differences in the use of evidence. According to Sinnema and Aitken (2011), Teaching as Inquiry emphasises the actions of the teacher through the use of data that links student outcomes and a teacher’s practice. This approach focuses inquiry on teachers’ efforts in relation to priority areas. Other models, such as action research for example, use a broader range of evidence, often driven by theoretical research in relation to students (East, 2011). Benade (2014) picks up on Teaching as Inquiry as an outcomes focused model and one that lacks the use of research to broaden the variety of information teachers have access to. He postulates therefore that Teaching as Inquiry is not a “theoretical approach to research...but is a model for conducting practitioner research” (p.110). The resulting effect is to reduce the ability of the model to give teachers access to a wide span of possible ways teachers can positively influence teaching and learning. Alternatively, Benade (2014) puts forward a concept of critical teacher reflective practice as a “richer and alternative way of thinking of practitioner inquiry” (p. 2). Critical teacher reflection differs to Teaching as Inquiry in that it is a more informal and ongoing process and
also contains the key attributes of being reflective, using information derived from research and making use of collaborative practice. These key differences between Teaching as Inquiry and critical teacher reflective practice are important to this study in that they highlight that the form that practitioner inquiry takes is important to its effectiveness in practice. These key attributes will now be explored in more detail as elements contributing to teachers ‘professional learning. For the rest of this chapter, the researcher will refer to the Teaching as Inquiry model as that found in the New Zealand Curriculum. The term practitioner inquiry will refer to the broader concept of teachers as inquirers into their own practice as it is presented in the literature.

**Practitioner Inquiry as a form of professional learning**

*Reflective practice*

Teachers can transform their practice by making judgements about their own work. Teachers who use inquiry take a stance that they learn from teaching, rather than positioning themselves as someone who has finished learning about teaching (Darling-Hammond, 2000). Benade (2014) describes reflective practice as “the on-going, regular and persistent use of reflective tools to engage, individually and collectively, in critical thinking about various aspects of practice” (p.10). This requires teachers to be skilled at reflecting on their own practice and to be able to apply self-reflective processes (Benade, 2008). Reflection also encompasses the notion of planning ahead. There is growing importance of the need for teachers to be forward thinking and using reflective practices more often in day to day practice, in order to inform future teaching choices (Babione, 2015). In order to be more forward thinking, reflective practice may be combined with the results of research.

*Evidence from research*

Reflective practice requires teachers to use evidence from research as a means of understanding the impact of their own practice (Babione, 2015; Fairbanks & LaGrone, 2006; Hall, 2009; Reid, 2004; Robinson & Lai, 2006). The benefit for teachers is that it leads to an increase in their professional knowledge (Fairbanks & LaGrone, 2006). Engagement with professional empirical literature enables new solutions to be found (Robinson & Lai, 2006).
Finding new ideas helps “confront false epistemological assumptions about the generalisability of teaching-learning relationships and that promote teachers’ situation into the impact of their teaching on their own students” (Sinnema & Robinson, 2007, p. 338). However, findings by Sinnema and Aitken (2011) show a lack of teachers engaging with literature. Hall (2009) suggests that it is the nature of literature that contributes to a disconnection between classroom dynamics and student needs. This is supported by Cochran-Smith and Lytle (1993) and Logan (2014) who describe that research is often unworkable. As a result, teachers perhaps do not see the value of such evidence (Sinnema & Aitken, 2011). An alternative approach is needed which takes ideas from research and problematizes them within a context meaningful to individual teachers, who then carry out these ideas through their own perspective (Hall, 2009). In other words, what is needed is for research data not to simply be applied into teachers’ practice as it is, but instead be carefully transformed into the context in which it is being used (Hall, 2009). Aitken and Sinnema (2008) suggest that transforming research into a teacher’s context can be achieved by teachers combining research with their own inquiry findings. This new knowledge is then applied to teachers’ practice in their individual classroom settings (Cochran-Smith & Lytle, 1993; Harris, 2002; Logan, 2014).

### The concept of teacher learning

It is important that the practice of Teaching as Inquiry leads to the concept of teacher learning. It was found by the Education Review Office (2012) that inquiry practices are less effective when addressing the learning inquiry phase and teaching inquiry phases when schools in their study were implementing the Teaching as Inquiry model. This is echoed more recently by the Education Review Office (2014), who found that, while schools “invested a considerable amount of time analysing achievement information, the inquiries did not result in new approaches or innovations that improved achievement” (p. 1). In other words, teachers are often provided with sufficient data. However, what seems challenging is for teachers to be able to interpret what the evidence is saying and be able to find new ways forward that are more likely to have a positive effect on student outcomes. Making more effective use of the data draws on the concept of teacher learning.
Professional learning can be effective when new ideas are readily incorporated into practice. Traditional forms of professional development often fail to generate new experiences for students, because teachers often maintain a mind-set that is governed by their own ideas and cultural norms (Darling-Hammond, 2000). What is needed are tools by teachers that allow the construction of “an environment in which educators theories or schemas are shifted through creating discomfort or disturbance” (Kaser & Halbert, 2009, p. 132). The discomfort associated with shifts in practice is proportional to distance away from a teacher’s current practice. It is this discomfort that provides an opportunity for learning to occur; however, as Coburn (2003) points out, “the more challenging a reform is to teachers’ existing beliefs and practices, or the more aspects of classroom practice or levels of the system it engages, the more it may need well-elaborated materials and sustained, ongoing professional development to achieve depth” (p. 9). Since challenging teachers to change their practice is a key role of leaders, then any programme of professional development needs to be strongly led if it is to become a normal part of organisational practice (Gordon, 2004).

Learning can take two forms; these are single and double loop learning (Argyris, 1977). Common to both forms is that they involve change. However, a key difference is that the former involves superficial change that is short lived and fails to address the underlying assumptions and beliefs that drive our actions. In contrast, double loop learning addresses those beliefs and assumptions by allowing the values that contribute towards those beliefs and assumptions to be made open to others. The consequence of taking a double loop learning approach is that it leads to more appropriate solutions, which meet specific needs through more informed choices. This is achieved through challenges to “your own norms, attitudes and assumptions” (Senge et al., 2000, p. 95). Double loop learning is used less often, “because the double loop cycle often leads to new choices that feel uncomfortable at first, it is easily forgotten” (Senge et al., 2000, p. 95). In order to create change, teachers therefore need to engage with their own theories and modify them in light of new information. What is needed for this to happen is the application of tools for teachers to carry this out.

It has been shown that practitioner inquiry needs to be grounded in context for it to be a learning process. This is highlighted by Timperley (2008), who states:
“In some educational jurisdictions, professional development takes the form of fixed programmes designed to develop particular knowledge and skills that have been identified as effective. While they may be based on sound research about student learning, such programmes are developed independently of the participating teachers’ practice contexts and tend to have less impact on student outcomes than approaches that are context-specific.” (p. 10)

Teachers operate in a context where knowledge is socially constructed through interactions with other components of the social environment (Hong & Lawrence, 2011). This is supported by Dempster and Macbeth (2009), who use context as a prerequisite for learning. They state that “cognition is inseparable from the social and emotional context in which it takes place” (p. 83). It therefore makes sense that any professional learning program for teachers uses teaching and learning as a starting point to highlight teachers’ needs. For example, this will include a range of social factors within a school, such as “knowledge, attitudes and skills of the staff and of the students, the teacher feelings for their charges and the value the school places on learning” (Dempster & Macbeth, 2009, p. 92).

**Use of student data**

Using student achievement data is an important part of reflective practice and has been highlighted as a strategy for achieving significant educational change (Fullan, 2000; Halbert, Kaser, & Koehn, 2011; Harris, 2002; Robinson & Lai, 2006). According to the Education Review Office (2012), the recommendation is that student achievement data be the driver of decisions made by individual teachers and indeed for the whole school. The kind of data that is relevant to a teacher’s practice is “quantitative and qualitative data about matters critical to understanding learners’ needs, achievements, dispositions, preferences and aspirations” (Dempster & Macbeth, 2009). According to Timperley (2008), the extent to which professional learning practices positively affect student outcomes is directly related to how those outcomes are used for teacher learning. The Teaching as Inquiry model attempts to create a practically useful way of integrating student feedback data collection methods into the daily activities of teachers and is considered a key element of effective practice for teachers (Ministry of Education, 2007). For this to occur, “teachers need to incorporate a range of skills, these include training in analysing achievement data as well as undertaking ‘teaching as inquiry’ projects” (Education Review Office, 2014. p. 16). Being able to effectively use formative assessment in new ways is also recognised by Halbert et al. (2011)
as key to the inquiry process in order to gauge the development of students by viewing the learning from the students’ perspective. Throughout the practice of practitioner inquiry, the accuracy of this information is seen as being important to carrying out inquiry (Robinson & Lai, 2006). However, simply adding data to the process of inquiry is not sufficient to generate a change in practice. What is more important is the way data is used, in that its meaning must be understood. Using data to generate new ideas involves new ways of thinking and therefore requires leadership (Earl & Timperley 2009).

“If educators are going to be active in interpreting and using data, as well as challenging and disputing interpretations or uses that they believe are contestable, they must become knowledgeable about judging the value and quality of the evidence and thinking and talking about its meaning” (Earl & Timperley, 2009, p. 7).

It is important for the sharing of data to be part of the inquiry process. A report by the Education Review Office (2014) found that leadership in successful schools involved “a relentless drive for ongoing improvement was informed by rich data and deep analysis of that data” (p.10). Achieving depth of data analysis is supported by Piggot-Irvine (2006) and can be achieved through the sharing of ideas. For example, research by Kaser and Halbert (2009) found that “when formal leaders and groups of teachers meet regularly to thoughtfully review student work and plan together based on learner needs, deeper learning occurs” (p.135). However, a prerequisite for deep analysis is that teachers have “personal ownership and focused intent” of their inquiries (Hall, 2009, p. 670).

Student data is an important driver for highlighting the professional development needs of teachers. Timperley (2008) also suggests that, for effective inquiry, teachers need the ability to receive feedback from students about the teaching and learning process in their individual classroom contexts. According to the Education Review Office (2014), using student feedback data is most effective when “seeking evidence where students are not doing well; reviewing the impact of teaching on all students; to improve teaching and be open to new practices that make a difference” (p.11). Furthermore, that students should be involved in inquiry is considered by Absolum (2006), who presents a learning focused relationship model comprising of a cycle of respect, openness and honesty. This model focuses on the symbiotic nature of teacher/student relationships. As in other models, it emphasises the
capability of active learning of both students and teachers through the generation and flow of information about student needs. Dempster and McBeath (2009) reported that positive learning environments involved students openly commenting on the quality of teaching. This idea of student agency, as well as teacher agency, is a feature of the ‘spirals of inquiry’ described by Timperley, Kaser and Halbert (2014).

Collaboration

Learning that utilises reflection is often traditionally done in isolation from others (Nelson & Slavit, 2008). Several authors have suggested that teachers working collaboratively with other teachers is a key component of professional development (Piggot-Irvine, 2006; Nelson & Slavit, 2006; Harris 2002). An outcome of working collaboratively is its ability to generate new information (Education Review Office, 2012; Nelson & Slavit, 2008). This is because working with others allows greater depth of discussion of student data (Dempster & Macbeth, 2009; Halbert, Kaser, & Koehn, 2011). Working collaboratively will involve tasks such as classroom observation and subsequent feedback, review, and the sharing of ideas (Dempster and Macbeth 2009). The benefit of these forms of professional learning is that they can build teacher capacity (Harris, 2002). For example, through discussion, collaborative inquiry has the ability to activate teachers’ prior knowledge, encourage reflective thinking and challenge existing ideas. It also promotes a shared commitment towards agreed actions and a more consistent approach of practice (Education Review Office, 2011).

In practice, collaborative inquiry can be applied through the use of professional learning communities. These are described by Timperley et al. (2007) as working with teachers from the same or other schools. Activities that learning communities may undertake include setting clearly identified tasks, generating ways of finding agreement, and agendas that allow each member of the group to present their ideas and comment on others (Logan 2014). Research from Sinnema, Sewell, and Milligan (2011) has shown that working collaboratively can also involve the use of researchers external to the school; evidence shows that this helped teachers engage with academic research. Neither evidence nor collaboration alone was found to be sufficient in producing shifts in student achievement. When evidence pertaining to classroom based outcomes and published reports was combined with discussion with academic researchers, this provided the stimulus for teachers to modify
practice. Another activity of professional learning communities is discussing evidence derived from classroom observation. Observation is considered necessary to the inquiry process, as it is a tool that can help analyse the link between teaching practice and the subsequent learning taking place (Hong & Lawrence, 2011; Sinnema & Robinson, 2007). Collaboration may also be a key measure to ensuring sustainability of inquiry over time (Nelson & Slavit, 2008).

Effective collaboration requires training in how the group interacts. For example, during group problem solving, teamwork and leadership (Dempster and Macbeth 2009). In a study by Robinson and Lai (2006) into generating a culture of inquiry, professional development topics were “theories of action, theoretical adequacy, and the ladder of inference” (p. 202). Furthermore, during the initial stages of implementation, a risk free environment was created to allow for personal growth. In turn, this environment led to commitment to further inquiry. This kind of learning experience aligns with the principles of adult learning, in that the issue is problem based, practical, self-directed, uses prior knowledge and links theory and practice (Rudman, 1999: as cited in Piggot-Irvine, 2006).

Professional dialogue
Interactions that engage with professional dialogue between teachers and their leaders is seen as key to changing a teacher’s practice (Cardno, 2012; Fowler, 2012; Hong & Lawrence, 2011; Robinson & Lai, 2006). Professional dialogue is productive when it takes the form of being able to “hold open and frank discussions about the impact of learning and achievement on all students” (Education Review Office, 2014, p. 12). Dialogue that can lead to transformed practice should focus on the link between teaching theory and teaching practice (Fowler, 2012; Hong & Lawrence, 2011). It is likely, and indeed productive, for dialogue to uncover differences in opinion. However, differences between people need to be viewed as alternative competing ideas to a common issue. It is how these differences are initially framed and then dealt with that determines the quality of the conversation (Earl & Timperley, 2009; Robinson & Lai, 2006).

Quality conversations are those that challenge and subsequently change existing values and beliefs and lead teachers to devise new ways of teaching that can lead to positive
learning outcomes (Robinson & Lai, 2006). Earl and Timperley (2009) describe a framework for evidence informed conversations. The framework uses three aspects. These are: relationships of respect and challenge; using relevant data; and an inquiry habit of mind. The components together are considered essential and are overlapping; failure to address all of them at the same time will reduce the quality of the conversation. Another framework for use in evidence informed conversations is that outlined by Cardno (2012), which allows beliefs and assumptions to be challenged through the generation of new information about a situation. Information is a common currency in the conversation, and is used to first clarify the problem and then to spring board the discussion towards new ways forward. In summary, effective practice of Teaching as Inquiry embodies a professional outlook whereby teachers take a reflective stance towards its practice utilising key attitudes and dispositions, such as being open to new ideas and accepting that no strategy is universally effective. These dispositions are applied to opportunities for reflection on a teacher's individual classroom practice, based on student data and combined with the results of research, to help teachers better understand the teaching and learning relationship.

**Teacher capacity**

The practice of Teaching as Inquiry requires teachers to adopt new ways of doing things (Dempster & Macbeth, 2009). The kind of professional learning that leads to sustained improvements in student outcomes is suggested to focus on “developing teachers’ pedagogical content knowledge in sufficient depth to form the basis of principled decisions about practice. This knowledge needed to be combined with evidence-based skills of inquiry” (Timperley et al., 2007, p. 46). The aim of professional development, according to Gordon (2004), is to facilitate student growth and development through empowering educators as individuals, teams and organisations with the capabilities to affect student learning. Those capabilities are described as problem solving, invention, and application of knowledge (Darling-Hammond 2000). When staff demonstrate those capabilities in their practice, it can lead to the concept of inquiry practices that are self-regulating; this is linked to longer term, self-sustaining improvement in teacher performance. This is articulated by Timperley et al. (2007):

“Sustained improvement also depends on teachers developing professional, self-regulatory inquiry skills so that they can collect relevant evidence, use it to inquire into the effectiveness of their teaching, and make continuing adjustments to their
practice. Teachers with these crucial self-regulatory skills are able to answer three vital questions: “Where am I going?”, “How am I doing?”, and “Where to next?”

The idea of self-regulation can lead to greater teacher agency. Agency in relation to models of inquiry refer to an individual's ability to act on their thoughts, rather than teachers or leaders doing it for them. Similar to self-regulation is the concept of adaptive expertise, which is considered a necessary skill for teachers to carry out inquiry practices as it promotes flexibility and responsiveness to changing student needs (Alton-Lee, 2011). Promoting inquiry practices can also be achieved through high levels of prescription and structure. In contrast, this kind of approach can fail to instil a self-regulation culture and instead become a barrier to teachers' professional development and teacher agency (Fullan, 2000). Other barriers to teachers' professional development include a lack of time, and lack of value as a means of improving schools, and a lack of focus in policy (Weinbaum et al., 2004). Furthermore, the spiral nature of this model implies that the learning can be shifted to new situations and, by re-applying the cycle, that learning becomes deeper.

**Practitioner inquiry and school improvement**

The capacity for generating large scale change in schools is attainable by all schools (Timperley, Kaser, & Halbert, 2014). School improvement is a concept focused on student achievement and involves the transformation of individual teacher's practice from a co-ordinated school wide approach. School improvement is referred to by Harris (2002) as “a strategy for achieving positive educational change that focuses on student achievement by modifying classroom practice whilst simultaneously adapting the management arrangements within the school to support teaching and learning” (p.10). Other definitions of school improvement focus on improving learning so that subsequent change can be managed more effectively (Hopkins, 1996; Miles et al 1987: as cited in Harris 2002). For inquiry practices to be effective, they must happen at the student, teacher and organisational level of the school (Timperley et al., 2007). The utilisation of inquiry for school improvement has the ability to make the decision making process more effective for leaders in terms of setting direction for schools (Kaser & Halbert, 2009). This is supported by Alton-Lee (2012) and Reid (2004), who suggest that practitioner inquiry can support all levels of the organisation. This can be achieved through “productive inquiry and knowledge building for
professional and policy learning” (p. 13). Therefore, focusing on teaching and learning should be at the heart of any school improvement plan and inquiry should be an important component (Harris, 2002).

Practitioner inquiry is a component of a wider range of tools used for school self-review and teacher development. By following the process of practitioner inquiry, teachers can highlight areas of improvement in their respective classrooms. It is relating those areas of improvement to school wide goals that co-ordinates the work of teachers to a common school goal and adds to overall school improvement (Alton-Lee, 2011; Nelson & Slavit, 2008). Using the inquiry process for school improvement is, however, infrequently effective, especially in the secondary sector. According to the Education Review Office (2014) “most New Zealand secondary schools have carried out some form of inquiry and improvement, the overall effectiveness of these processes was mixed” (p.1). The Education Review Office Review (2014) found that schools that used the Teaching as Inquiry model were effective when key school wide factors were present. These were; a school wide culture of improvement, coherence across self-review practices, guidance in policies and procedures, and organisation wide support for appraisal. Self-review practices that promote school improvement can be achieved through “collegiality, trust and collaborative working relationships that focus on teaching and learning” (Harris, 2002, p. 12). Coherence is referred to by Hopkins and Jackson (2003) as the ability to “integrate, align and coordinate innovations into their own focused programmes” (p.88). Coherence can be achieved through the use of administering common assessments among students, the results of which provide a collaborative forum for teachers and ultimately improve inquiry practices and teacher learning, leading to school improvement. Important to this process, however, is that those assessments be collaboratively designed and evaluated by teachers and that the nature of assessment is related to the learning goals of the organisation (Linda Darling-Hammond, 2014)

*Raising teacher capacity school wide*

Raising the capacity of individual teachers is needed if overall school improvement is to occur. There is now widespread acknowledgement that leaders in schools need to implement learning processes in order for staff to professionally develop (Timperley et al., 2014: McBeath & Dempster, 2009: Absolum, 2006). Issues that arise for leaders are, first of
all, that they must introduce systems and structures for teachers to become classroom inquirers and, secondly, that their practice is sufficiently supported so that it promotes professional learning at sufficient depth to enable a shift in teachers' practice and, therefore, positive outcomes for students (Timperley et al., 2007). Longer term school improvement is helped through professional learning and the conditions in schools. It is the nature of school conditions independent of outside help that determine whether improvement continues (Timperley, 2008). Creating learning for teachers in schools is a function of school culture and establishing a community of learning can be achieved by a process described by Fullan (2000) as reculturing. A culture of inquiry is characterised by possessing “intellectual curiosity, motivation, and openness to challenge” (Sinnema, 2005, p. 27). Those schools which effectively use inquiry for school improvement also have a culture of data analysis, the benefit of which leads to effective self-review processes and enables the school to better meet the needs of its students. (Education Review Office, 2014). Achieving a culture of data analysis is likely to be a complex undertaking, as it has been shown that even schools which have established inquiry practices often struggle to generate sufficient learning in teachers to promote change (Education Review Office, 2012).

School wide professional learning communities

One way in which schools can support inquiry is through processes that afford staff time to work collaboratively (Halbert, Kaser, & Koehn, 2011; Nelson & Slavit, 2008; Weinbaum et al., 2004). One way of achieving this is through promoting collaborative inquiry in professional learning communities. East (2011) suggests that collaboration, when using practitioner inquiry, may involve working with colleagues in the same or different schools, or indeed with researchers. Effective collaboration, however, goes beyond creating new structures (Nelson & Slavit, 2008). Developing effective collaboration in professional learning communities requires support from leaders so that professional learning communities can contribute to overall school improvement. This will focus on processes for staff to follow and reiterate that professional development is ongoing (Halbert et al., 2011). These processes should focus on improving the ways in which teachers work and interact together (Harris 2002). Interactions should focus on how education theory relates to practice through an open and challenging discourse (Dempster & Macbeth, 2009; Earl & Timperley, 2009; Timperley et al., 2007). Items of discussion should be collectively agreed on (Nelson & Slavit, 2008). Such a discourse has been described as exploratory talk and can help teachers make sense of their work, leading to new knowledge through the modification of
existing beliefs achieved by re-framing an individual teacher's idea so that new perspectives can emerge (Fairbanks & LaGrone, 2006). Support for collaborative inquiry requires three elements, according to Nelson and Slavit (2008). These are: to create a highly functioning collaborative community; to examine current beliefs; and for staff to be users of a procedural method of inquiry as a mechanism to achieve a shared goal.

Practitioner inquiry and teacher appraisal

The requirements of appraisal

Annual appraisal is a process used by New Zealand schools for performance management and it has become a mandated requirement of teaching since 1997. The requirements of appraisal are through two sets of teaching standards. These are:

- Professional standards embedded in the Guidelines on Performance Management Systems and the Primary and Secondary Teachers Collective Employment Contracts
- The Practicing Teacher Criteria developed by the Education Council.

These two components provide a set of standards for teachers gaining and maintaining registration. They also provide a set of criteria that when met, teachers may experience salary progression, a process called attestation. They also ensure that a minimum standard of performance is being achieved by teachers and so provide a framework for accountability. The process of appraisal therefore aims to make teachers and the school accountable to the government and the community for their performance (Cardno & Piggot-Irvine, 1997). At the same time, appraisal has the purpose of developing and enhancing teachers', and subsequently the schools', capabilities so that performance may be improved. It is in meeting of these two objectives that appraisal can be considered as having a dual purpose (Cardno, 2012).

Challenges of appraisal

Since the move towards self-managing schools under the Tomorrow’s Schools reform of 1989, schools are responsible for setting up their own processes to meet the above appraisal requirements. However, this scenario has led to differences between schools in the interpretation of appraisal requirements, leading to differing appraisal practices (Nusche,
Laveault, Macbeth, & Santiago, 2011). What schools have found challenging is to set up appraisal systems that achieve both the developmental and accountability components of appraisal (Middlewood & Cardno, 2001). In addition, appraisal practices have often been framed with values associated with accountability (Cardno, 2012). This has often led to appraisal practices becoming more managerial and compliance orientated. A consequence of this is that the practice of appraisal has become one sided and past attempts at using appraisal as a means to develop teachers' pedagogical skills have failed.

The challenge of improving the link between the professional development of teachers and appraisal is highlighted in a more recent report by the Education Review Office (2014), who found that only four percent of schools in their study had implemented systems of appraisal that lead to improved teacher capability and improved student outcomes. Those schools used Teaching as Inquiry to identify areas for teacher improvement that would also contribute to the strategic goals of the school. The use of Teaching as Inquiry led to coherence between the school's self-review processes and the contribution of appraisal towards overall school improvement. A key finding of the study that enabled this process was a deep understanding by leaders of the processes of self-review and evaluation. (Education Review Office, 2014). This study shows that integrating the Teaching as Inquiry model into processes of appraisal is a difficult process in light of it being achieved by so few secondary schools. The study also highlights the highly influential aspect of leadership as key to enabling appraisal systems that contribute towards school improvement. Associated with ineffective appraisal systems is a lack of leaders' understanding of managing the curriculum, assessment, lack of school culture and how to carry out self-review (Education Review Office, 2014).

Leadership of appraisal is supported by Sinnema (2005), who states that “leadership is a key mechanism in determining whether appraisal serves learning or compliance purposes” (Sinnema, 2005, p. 187). Indeed, schools are often more successful in achieving the compliance components of appraisal (Education Review Office, 2014). An important part of leadership is its ability to help teachers set appraisal goals that lead to overall school improvement. In the past, there has been a lack of commitment towards appraisal goals often being due to the nature of appraisal goals lacking a focus on student needs. This has been shown to be a feature in schools that have a compliance orientated appraisal system.
(Sinnema & Robinson, 2007). More effective goal setting is generated through the use of student data to focus teachers’ appraisal goals on meeting the needs of their students above all other professional obligations (Sinnema, 2005). For this to happen, systems need to allow school goals to feature into the goals of individual teachers, if teachers’ work is to contribute to overall school improvement (Cardno, 2012). This can be achieved by schools investing in the components of the organisation, as well as the needs of the individual, so that schools can support teacher professional development (Hopkins & Jackson, 2003). The components schools need to invest in to develop effective appraisal systems are those involved in self-review, supported by policies and procedures that support appraisal (Education Review Office, 2014).

Appraisal and reflective practice

The current relationship between appraisal and the concept of reflective practice is that, in 2011, an Education Review Office Report recommended that leaders and teachers incorporate the Teaching as Inquiry model into their appraisal systems with the aim to “create opportunities for sustainable professional learning about effective teaching practice” (Education Review Office, 2011, p. 39). This approach has been supported through research, mainly through the work of Sinnema (2005), who points out that in traditional forms of appraisal, effective teaching practice comprised ways of teaching in which teachers were evaluated against. This approach used behaviours of teachers considered most likely to improve learning as criteria on which to evaluate teachers. This approach failed to make use of inquiry as a means of teachers finding out for themselves what is effective in relation to their own contexts (Sinnema & Robinson, 2007).

Contemporary ideas about accountability focus on the capabilities of teachers as inquirers into their own practice. However, for this to happen, staff need to have the capability to initiate and carry out practitioner inquiry. Accountability can then be derived from ensuring teachers participate in the practice of inquiry (Sinnema, 2005). Teacher evaluation processes may therefore be conceptualised in terms of teachers’ abilities as active researchers of their own practice in relation to their own classroom contexts. This is summarised by Hong and Lawrence (2011), who suggest that comprehensive evaluation of teaching and learning can include a close look at teacher quality by analysing teachers’
examination of their own practices and reflections about how their decision-making impacts student outcomes. (p 1). This is echoed by Fowler (2012), who points out that “each teacher’s inquiry is a key item in the appraisal process because it offers a window into the quality of their professional practice and therefore holds high professional status” (p.6). The use of inquiry in the process of evaluation is justified by Sinnema and Robinson (2007) as it is through inquiry that student needs are identified. The notion of allowing teachers greater professional freedom in relation to their appraisal is supported by Nelson and Slavit (2008) who suggest allowing teachers to manage the process collectively within themselves. This approach could generate an inherent leadership among teachers, in that individuals may be able to influence others beyond the individual classroom contexts.

Practitioner inquiry and the leadership of learning

The success of school improvement measures is dependent on how they are led and managed (Harris 2002). Leadership of learning is a concept that draws on different forms of leadership used to “achieve important school outcomes, with a particular focus on student learning” (Hallinger, 2011, p. 126). Focusing on the leadership of learning is important, as “leadership is so influential on direction and outcomes” (OECD Secretariat, 2013). The practice of leading teaching “is where school leadership meets classroom teaching” (Spillane, 2013, p. 65). Principal leadership of inquiry is framed by models such as the educational leadership model, found in Kiwi Leadership for Principals. This model states that principals, under the key practice area of pedagogy, should foster inquiry through the development of professional learning communities and that this can be achieved through contextually based problem solving (Ministry of Education, 2008). Following the same model, the role of middle leaders is to directly lead professional development of their teachers in pedagogical practices, which include cycles of inquiry (Ministry of Education, 2012).
This is supported by the OECD report (2013) into 21st Century leadership, which suggests that leaders “take responsibility for ensuring that all teachers are researching and evaluating their practice” (p. 19). This will involve providing “teachers with the opportunities to learn, access relevant expertise, and opportunities to meet to process new information” (Timperley et al, 2007, p. 31). Unfortunately, many New Zealand schools have little or no processes in place to support teachers’ inquiry (Education Review Office, 2012). The following actions were evident of leaders in schools where there was a high level of understanding of the Teaching as Inquiry model:

- Establishing inquiry routines (such as regular meetings and ongoing classroom evaluation practice)
- Developing guidelines, expectations and protocols about how groups and teachers should engage in inquiry
- Making information available in forms that teachers could use as part of their inquiry activity
- Conveying the importance of, and modelling, reflective practice

- Creating opportunities, through school systems such as target setting and performance management, for teachers to build their capacities as high quality teachers.

(Education Review Office, 2011, p. 28)

The leadership of practitioner inquiry processes can be considered as building capacity (Fowler, 2012). Leaders can increase teachers’ capacity by generating the conditions for teachers to gain access to learning opportunities (Harris 2002). This is supported by the School Leadership and Student Outcomes: Best Evidence Synthesis (Robinson et al., 2009); when school leaders promote and/or participate in effective teacher professional learning and development, this has more impact on student achievement than any other leadership activity. This will involve developing capacities in others so that inquiry processes become professional practice, summarised by Timperley (2008) as “those who plan and facilitate professional development need to support teachers as they develop the theoretical understandings and tools that will enable them to take a self-regulated, inquiry approach to their everyday practice” (p. 21).

The leadership of learning can be theorised as being reliant on, and enacted through, the process of learning itself. For example, learning stems from a social context where cognition is generated from the experiences of teachers as they interact with the social and emotional factors in classroom practice (Dempster & McBeath, 2009). The cultural norms that leaders create significantly affect the success of professional learning programmes. These include the nature of the common discourse concerning the approach to teaching and learning, as well as the attitude and outlook of the staff (Piggot-Irvine, 2006). These attributes cannot be nurtured unless the conditions for inquiry involve a supportive environment that encourages challenge and trust (Kaser & Halbert, 2009: Harris, 2002). Further to these conditions, Reid (2004) describes conditions for inquiry from a relational perspective based on trust, respect, and equality of ideas; this basis can be used to hold discussions and debate issues utilising a wide field of ideas. Furthermore, many opportunities to develop the skills of inquiry are needed for it to become part of practice (Timperley, 2008). Leaders should also remove barriers to inquiry. These include isolation, high workload, stress and routine activities (Gordon, 2004).
Capacity building should aim to empower the individual, teams and the organisation (Gordon, 2004). It is not only teachers who need to become proficient at analysing data, but is the role of leaders at all levels of the organisation if greater insight into student needs is to be revealed (Education Review Office, 2014). Leaders are an important part of inquiry and their own development is needed for subsequent teacher change to occur, and so leading teaching involves leadership that places value on the interactions of those within organisations and reduces the dependency on the top leader (Spillane, 2013). Inquiry should be used by leaders to inform and be part of wider school systems and structures. According to the Education Review Office (2014), in the few cases where the Teaching as Inquiry model was found to be an effective component of the self-review process, there was a shared responsibility among senior leaders for professional learning about teaching and learning (Education Review Office, 2014). Spillane (2011) views inquiry practices as not just a means of dealing with problems and new situations, but to help implement new policies and take a broad view about how the different parts of the school landscape fit together. For this to happen, it is important that inquiry processes are coherent with other programmes vertically and horizontally across the school. This includes school wide self-review components such as policy making, reporting and planning, assessment for learning, inquiry and knowledge building. However, this is infrequent in New Zealand schools, as well as internationally. This is supported by Reid (2004), who highlights the international absence of an alignment between policy, systems and practice to support inquiry. Weinbaum et al. (2004) suggest this is due to the rise of teacher accountability systems and high stakes testing.

Schools that are considered effective at inquiry also have a culture of inquiry developed over several years (Education Review Office, 2014). Reid (2014) describes how, internationally, there are few examples of schools where inquiry has become an institutionalised activity, embedded in systems and processes as well as structures and the environment. According to the Education Review Office (2014), schools with cultures of inquiry contained teachers who were self-motivated to find and respond to student needs, self-review processes that informed the success of school initiatives in relation to student learning, and leaders and teachers who demonstrated confidence to engage with students and family to help make changes. Shifting the culture of a school must focus on changing individuals’ and groups’ behaviours. Providing a framework for teachers to follow is an important step in moving towards a culture of inquiry (Robinson & Lai, 2006). Positive school culture that leads to school improvement focuses on behaviours of staff that lead to high performance, such as
breaking down defensive routines (Robinson & Lai, 2006). Reid (2004) highlights the need for educators to analyse the reasons behind their decisions for future action. Other norms include the skills for shared decision making, positive values, maintaining positive relationships when working individually and collaboratively, as well as having clear direction (Harris 2002). Gordon (2004) takes the view that school culture can also be developed by teachers affecting the work of each other through a collective fostering of growth. School systems must allow teachers, on a voluntary basis, to participate in posing new alternatives to teaching and subsequently reflect. This can be achieved through incentives for teachers, the creation and maintenance of supportive networks, reform of rigid organisational patterns, and reform of hierarchical power relationships (Cochran-Smith and Lytle 1993).

It is the role of leaders to implement practitioner inquiry organisation wide. However, research has shown that many secondary schools have “minimal, or no processes in place to support teachers’ inquiry” (Education Review Office, 2012, p. 4). Many implications emerge for leadership activity, as the introduction of practitioner inquiry involves shifting teachers’ perceptions, practice and school culture. For inquiry practices to become established, certain key conditions in schools are needed. According to Sergiovanni (2001), conditions for learning in schools relate directly to the opportunities to increase knowledge and skills. Examples of opportunities include experiencing challenge, receiving feedback, support to try new ideas, and support for one’s own growth. More specifically, conditions in schools that lead to effective use of the Teaching as Inquiry model have been identified by the Education Review Office (2012) as:

- Building the capacity of teachers to meet the identified needs of students
- To facilitate the selection of inquiry goals that directly relate to raising the achievement of priority learners
- To foster an approach to inquiry where solutions to classroom issues are context specific
- Align professional learning so that individual teachers may further meet the needs of their students

Layers of support are needed for change to occur in teachers’ practice (Nelson & Slavit, 2008). Providing a systematic process for inquiry, whereby teachers can identify and address classroom specific issues, can lead to the practice of inquiry becoming more valid
and reliable (Hong & Lawrence, 2011). In summary, leaders have to contend with the generation and ongoing maintenance of school conditions that promote Teaching as Inquiry practices. Furthermore, leaders must also achieve conditions that lead to sufficient depth of change, as in many cases there is a danger that efforts to efficiently implement new school activities can lead to conflict in schools between depth and breadth of the spread of new school practices (Coburn, 2003).
Chapter Three
Methodology

Introduction

The aim of this section is to outline the research design in this study. For clarification, the remainder of this study focuses on the implementation of the Teaching as Inquiry model as described in the New Zealand Curriculum in New Zealand Secondary schools. The researcher will refer to it as Teaching as Inquiry from now on. I will begin by discussing the epistemological position the researcher has taken to understand Teaching as Inquiry in New Zealand Secondary Schools. I will then discuss the methodological approach the researcher has taken to find out the purposes of Teaching as Inquiry and the ways it has been applied in relation to the literature base. Two data collection methods will be outlined. These are the semi structured interview and documentary analysis. Both methods will be used to find out how schools have interpreted and operationalised the concept of Teaching as Inquiry from different levels within school hierarchy. Finally, the concept of reliability, validity and ethics will be addressed in relation to the chosen methodology and the context of the study.

Methodology

Epistemology has been defined by Davidson and Tolich (2003) as the “branch of philosophy that deals with how we know what we know” (p. 25). In other words, epistemology is about an approach to knowledge building. Cohen, Manion, and Morrison (2011) describe epistemological knowledge in terms of its “nature and forms, how it can be acquired, and how it is communicated to other human beings” (p. 7). Epistemology can take two forms, called paradigms, both of which have opposing premises. An interpretative paradigm takes an inductive approach by observing social situations and aiming to understanding the process of meaning making by people in their contexts. In contrast, a more positivist approach involves counts of observable phenomena from an outside perspective. The epistemological position taken by this study is one that is situated within the interpretative paradigm. This was chosen over the positivist paradigm due to the study being a meaning-making process involving people in their own contextual settings, the results of which may
be largely unknown to the researcher. Studying social phenomenon engages with an individual’s world view in relation to given situations that, in turn, drive their interactions and interpretations and so a humanistic orientation of the research is needed. In essence, the study is one of human behaviours (Cohen et al., 2011). Since human behaviour involves individuals’ values, values can be considered a major point of difference between the interpretative and positivist paradigms.

Research aims

This research aimed to examine how leaders have navigated the landscape around positioning and implementing Teaching as Inquiry in relation to individual teacher and overall school improvement processes. Studying Teaching as Inquiry is essentially a social process and the researcher has attempted to interpret the ways in which leaders and teachers have operationalised the Teaching as Inquiry model outlined in the New Zealand Curriculum. The research was also subjectively constructed. Subjectivity refers to the fact that the answers to the research questions were to be found in the subjects themselves (Vogt, 2012) and so the data revealed the different interpretations of teachers and leaders in what they perceive to be the purpose of Teaching as Inquiry and what it should be applied to. This perception of Teaching as Inquiry practices is influenced by the many other factors in schools, such as other initiatives and processes that teachers and leaders have to deal with on a day to day basis. As a result, social construction cannot be divorced from the environmental factors in which teachers are situated (de Lansheere, 1997). When these factors combine, teachers and leaders can respond either mechanically, as if the above parameters are controlling, or alternatively, they can generate their own meaning and behaviour (Cohen et al., 2007). It is the latter that was assumed in this study and the researcher aimed to use an interpretative orientation to capture what schools did in their respective contexts.

The purpose of research design was to “portray, analyse and interpret the uniqueness of real individuals and situations through accessible accounts” (Cohen et al., 2011, p. 291). The researcher hoped that the study reveal factors behind participants’ perceptions of how they view Teaching as Inquiry in their own settings. These manifested themselves as stories, anecdotes and examples, and were essential to the study as they were, as Keeves (1997) points out, “interdependent and inseparable” (p.278). The researcher aimed to base the
study in reality where unusual or previously unexplored effects can be highlighted. For example, the study aims to interpret teacher/leader nuances and the associated actions, but also to “capture those elements that make life conflictual, moving, and problematic” (Guba & Lincoln, 2005, p. 206). The aim of the study was to also provide a holistic perspective and to “set the case within its context” (Cohen et al., 2011, p. 289). This was achieved by the researcher cross-referencing the data to make inferences from the accounts given by individuals. Collectively these provided an overall impression of the nature of Teaching as Inquiry practices from an organisation wide perspective.

**Sample Selection**

The research sites were two state-funded secondary schools situated in the greater Auckland area. The type of sampling used for the research was purposive sampling, in that research sites were used where Teaching as Inquiry was currently being practised. Bryman (2012) points out that “the goal of purposive sampling is to sample cases/participants in a strategic way, so that those sampled are relevant to the research questions that are being posed” (p.415). This is in contrast to random sampling, as used in quantitative paradigm, which aims to avoid the use of chance when choosing subjects (Bryman, 2012). In each research school, the researcher sought volunteers by conducting a presentation to the whole body of staff describing the aims of the research and then asking for volunteers. Those that came forward were given an information sheet as in appendix one to describe more about the study and what they would be volunteering for. Of the volunteers that expressed interest following the whole school presentation, the researcher chose two teachers, two middle leaders and one senior leader. Those that volunteered first were chosen to participate in the study. This approach was decided on due to the time constraints of the study.

**Research methods**

**Documentary Analysis**

The first method of research used was the examination of several forms of documentation. These were documents that relate directly to the leadership and practice of Teaching as Inquiry. The first document to be analysed was the New Zealand Curriculum produced by the Ministry of Education (2007). This was chosen because it contains the Teaching as Inquiry model and is a piece of binding literature across schools and has been adopted by
Secondly, policy documents relating to each research school were analysed to help the researcher determine the extent to which school policies promote and support Teaching as Inquiry in their individual settings. Since New Zealand Secondary Schools have become self-managing, they have to operate within legislative guidelines related to appraisal, attestation, professional standards and the requirement of being a good employer. Many schools are using Teaching as Inquiry as a means for teachers to provide evidence for appraisal and so it was important to analyse how Teaching as Inquiry sits within the policy landscape of each school.

Thirdly, procedural documents from each school, that provide support, guidance and theoretical information about Teaching as Inquiry, were analysed. These are documents produced by senior leaders which helped the researcher to clarify how leaders have interpreted the purpose of Teaching as Inquiry and implemented it in their unique contexts. These documents also outlined what Teaching as Inquiry is applied to. Analysing these documents complements the data gathered from interviews by allowing triangulation between what the school espouses the purpose and application to be in the literature given to staff and the views of individuals in relation to its actual practice.

Semi-structured interview
The second method used was to conduct semi-structured interviews. Mutch (2005) defines the semi-structured interview as a "set of key questions that are followed in a more open ended manner" (p.126). The semi-structured interview was chosen as it relates to a qualitative methodology through the philosophy of being able to capture not only facts, but also an impression of how the participants view situations (Bryman, 2012). The research questions are highly contextual, as they aim to capture how inquiry practices in each school are carried out in relation to their unique internal and external influencing factors. Also, Teaching as Inquiry is used in many schools as a mechanism for professionally developing staff is very personalised and is likely to engage with teachers’ personal values. Other methods, such as a questionnaire or a structured interview, would be unsuitable in this
instance because they lead to more rational answers that are more associated with the quantitative paradigm and fail to “assess the emotional dimension” (Fontana & Frey, 2005, p. 703). Some structure is needed, as it will be useful to compare leaders’ responses across settings. Too unstructured and the interview may become difficult to record. However, too much structure may lead to some information being missed and important points undervalued. A semi-structure approach aimed to promote a compromise by maintaining control of the interview for some of the time through some set questions at the beginning to gather some basic facts. However, further opportunity was given for spontaneity of ideas. Following on from the facts, the researcher wanted to engage with the interviewee more informally to capture the influences behind leaders’ choices. At this point, the benefit of the semi-structured approach was that it allows all aspects of the study to be covered, as it will reveal items crucial to the participant (Bell, 2010). The interview then becomes more of a “site for a social encounter, not simply a site for information exchange” (Cohen et al., 2011). During the schedule, prompts were used to clarify questions or topics, promoting further discussion through extension or elaboration of ideas. These aimed to illicit feelings, reasoning and emotions, such as by asking why the leaders think the way they do, or why they prefer a particular course of action over others. The researcher needs to be mindful, however, that a relationship with the participant needs to be established (Mutch, 2005).

It is important to the practice of interviewing to generate meaning from the answers. This is because interviews have longer questions and answers than other forms of data collection (Vogt et al., 2012). During the semi-structured interview, data was obtained from what was said and also from non-verbal language to help the researcher generate greater meaning from the interview. The degree to which the above conditions are achieved is a function of the structure of the interview and the format of the questions. Question format refers to how they are phrased or organised. The interview therefore also becomes a constructivist activity and discussion may be enriched as new questions stemming from the participants emerge (Guba & Lincoln, 2007). To achieve this, the researcher was mindful to use questions of sufficient quality that were open-ended in nature and set in a context so that they can be understood correctly and, therefore, authentic responses be obtained. This approach revealed “what is on the interviewee’s mind as opposed to what the interviewer suspects are on the interviewee’s mind” (Krueger, 1994, p. 57). Closed and specific questions were used, but these were used at the beginning of the interview to set the scene for later questions. However, the researcher aimed to capture opinion and therefore a more open
format was needed. It cannot be assumed that open questions will lead to the disclosure of authentic opinion. To ensure open answers are forthcoming, Cohen et al., (2011) suggest careful consideration of the structure of the question. For example, asking for specific examples that illustrate their opinion. Finally, the data was recorded by transcribing the conversation, followed by analysis.

**Data Analysis**

Data analysis is defined by Lofland, Snow, Anderson, and Lofland (2006) as a transformative process in which the raw data is turned into “findings” or “results” (p.195). The type of data analysis used was a function of the choice of response mode and the chosen methodology (Cohen et al., 2011). In other words, the way the data is generated, recorded, interpreted and reported relates to purpose that the data aims to achieve. All the questions were analysed using inductive logic through the researcher interpreting not only the spoken words, but also attempting to interpret other kinds of data, such as tone, mood, pauses, and hesitancy and so on. Inductive approaches “tend to let the data lead to the emergence of concepts” (Yin, 2011, p. 85).

**Semi-structured interview**

The type of analysis used for the interview and the interview data was thematic analysis. An interview schedule for this study is provided in appendix A. The first step was to transcribe the data onto Microsoft Word. Interpreting qualitative data is a continuous process and interview data was transcribed immediately after the interview. Secondly, the transcribed data was coded by ascribing a “category label to a piece of data, with the category label either decided in advance or in response to the data that have been collected” (Cohen et al., 2011, p. 428). Lofland et al. (2006) suggest coding categories that “capture the central elements of the setting in the language” (p.205). These were key elements such as “repeated words, strong emotions, metaphors, images, emphasised items, key phrases, or significant concepts” (Mutch, 2005, p.177). Codes were also used that cluster around people, activities or spaces where activities are carried out (Lofland et al., 2006). Multiple coding, by attaching more than one code to each piece of information, allowed connections to be made on multiple dimensions and bring some rational meaning to the complexity of the research questions.
During the process of coding, a technique known as memoing was also used to attach ideas to the various coded categories. Memoing is stressed by Lofland et al. (2006) as key to creating a fascinating study and could be in the form of clarifications about what the codes mean, or attaching theoretical concepts to the codes and their relationships. This allowed the data to speak for itself rather than attaching it to a theory. Following the identification of general units of information, the researcher managed the interpretation of interrelationships by using visual tools such as concept charts, matrices or taxonomies (Lofland et al., 2006). These allowed themes to be highlighted within specific issues, between issues or through the entire discussion (Davidson & Tolich, 2003). Caution was applied during this stage using the help of Krueger (1994), who stresses the need to avoid making judgements about the importance of issues based on the frequency of use. This was actively avoided by allowing participants to advocate their most important issues during the interview.

Finally, the use of ‘why’ questions was avoided in light of considerations provided by Krueger (1994), who instead highlights the benefits of using terms such as ‘how’, or ‘what’ in an interview question. The former has the tendency to promote defensive behaviours and consequently provide an invalid and unreliable account of the situation. On the other hand, the latter are particularly good at describing individuals’ feelings in relation to a phenomena such as a school programme. Ensuring participants answer authentically and in context can be achieved through the use of cues or short comments which prompt the discussion to continue further. Their use can confirm the importance of a piece of information. For example, if the prompt fails to instigate further discussion, then it is likely the point is of less importance to the group.

**Documentary Analysis**

The purpose of documentary analysis in this study was to complement the semi-structured interview through generating an understanding of the key policies, processes and guidelines behind Teaching as Inquiry at each research school. Firstly, policy documents were analysed using a framework for policy analysis developed by Taylor and Francis (1997), which consists of examining its context, text and consequences (as cited in Bell & Stevenson, 2006). Context refers to the economic, social and political factors that have lead
to the purpose of the policy. The policy text refers to the way the content of the policy is conveyed in terms of the intrinsic values and how it is framed as well as the specific actions and roles and responsibilities. Finally, the policy consequences refers to the way the policy is implemented and is a function of how the policy is interpreted.

Secondly, documentary analysis was carried out on the New Zealand Curriculum (Ministry of Education, 2007) and procedural and process documents in each school. This was done by using documentary analysis criteria for analysing the quality of documents. The criteria were developed by Wellington (2000) as a means of analysing documents in educational research. They are authorship, audience, production, presentation, intentions, style, function, genre, content, and context. The way the criteria are applied is described by Wellington (2000) as a bridge between the researcher’s theoretical perspective and the position of the document.

**Reliability and Validity**

A valid study has been defined by Yin (2011) as “one that has properly collected and interpreted its data so that the conclusions represent the real world” (p.78). Cohen et al. (2007) suggest that validity in a qualitative paradigm can be achieved through “honesty, depth, richness and scope of the data” (p.133). Honesty was achieved through ensuring that a valid interpretation of the data was made by constantly being mindful of the emergence of the researcher’s assumptions during interpreting the responses. This was achieved through adopting a critical stance and questioning how well the data collection methods actually captured the essence of the research questions. Also, during the data collection, sensing whether the participants gave their most honest response. Describing all the interactions accurately during both the description and interpretation of the data has added depth to the study.

Reliability can be described as a “fit between what researcher’s record as data and what actually occurs in the natural setting that is being researched” (Cohen et al., 2007, p.149). During the semi-structured interviews this was mainly addressed through the avoidance of bias. Bias can enter through changes to any factors which influence the response of the interviewee or focus group participants. For example, the researcher avoided changing the
wording of the questions between participants and was also mindful of tone. Any alteration of these could have led to the participants understanding the questions differently and could potentially have influenced the participants’ response. A poor relationship could also have affected the participants’ responses, which could have led to participants becoming less forthcoming in sharing information, and so the researcher attempted to build a positive relationship from the start.

**Ethical Issues**

It is important that ethical concerns are addressed throughout any study (Wilkinson, 2001). Although it is hoped that the final report of this study may be of benefit to educational leadership and management practices, it must be weighed against ethical concerns. As the researcher in this study is investigating people, working ethically must involve “consideration, fairness and respect” (Mutch, 2005, p. 78). Following research approval from the Unitec Research Ethics Committee (UREC), the two case schools used in this study were approached by, first of all, meeting with each principal to outline the aim of the study and to gain permission for carrying out research in their school. An information sheet outlined in appendix B was then supplied providing further information about the nature of the research, which was to carry out interviews. Upon gaining permission, an organisational consent form was signed by the principal. In order to gain the voluntary participation of teachers in the interviews, the researcher spoke to the whole staff about the nature of the study and a brief information sheet was provided. The researcher then asked for two Heads of Department and two teacher volunteers, in each case school, to take part in an interview. When volunteers came forward, the researcher followed the steps outlined by Vogt, Gardner, and Haefele (2012) when attempting to work ethically with volunteers. These were; gathering consent, considering how harm can be avoided, and maintaining participants’ privacy. Failure to address the above points could have led to the concept of deception.

First of all, informed consent involved supplying volunteers with all the relevant and correct information, and ensuring that they understood it. Confirmation of their permission to take part in the study was also required (Wilkinson, 2001). Consent was gained using the
UNITEC departmental consent form outlined in appendix C. This described the purpose of the research, how the data would be gathered and also the nature of the information sought, as well as stressing that volunteers could withdraw from the interview at any time and that their identity would remain anonymous. It was also made clear to volunteers that any transcribed data would then be kept on a computer stored on site at UNITEC. Furthermore, participants would be allowed to view the transcribed data prior to the researcher commencing final reporting. Once Transcribed, the data was analysed. Following analysis, the data was uploaded to a USB drive and stored in a locked cabinet in the researcher’s supervisor’s office.

In terms of avoiding harm to participants, the information contained in the consent form would have indicated to participants whether the research was likely to cause them psychological stress. Safeguarding against psychological stress was also managed by allowing participants to review what they have said before final reporting (Vogt et al., 2012). The greatest potential harm to interviewees is a breach of privacy. A participant’s right to privacy also includes the right to an accurate portrayal of the interview (Vogt et al., 2012). Confidence was maintained throughout the study by keeping names of organisations and the participants undisclosed, using letters or pseudonyms instead. Finally, the researcher approached all communications with integrity so that the researcher gained the trust of all participants and that they felt comfortable in their participation (Bell, 2010).
Chapter Four
Findings

Introduction

This chapter displays the findings from interviews and documentary analysis from both school sites. The chapter begins with findings from documentary analysis of the Teaching as Inquiry model as it is presented in the New Zealand Curriculum. This is followed by documentary analysis of school policy and procedural documents used by leaders and teachers in the implementation of Teaching as Inquiry in each school. Interview data is then presented and organised into six categories. I have presented each category from both schools using three different perspectives: one senior leader, two middle leaders and two teachers. I have summarised each category by outlining the key findings from each category. To identity the participants, the following codes outlined in table 4.1 were assigned.

<table>
<thead>
<tr>
<th></th>
<th>School X</th>
<th>School Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Leader</td>
<td>SLX</td>
<td>SLY</td>
</tr>
<tr>
<td>Middle Leader 1</td>
<td>ML1X</td>
<td>ML1Y</td>
</tr>
<tr>
<td>Middle Leader 2</td>
<td>ML2X</td>
<td>ML2Y</td>
</tr>
<tr>
<td>Teacher 1</td>
<td>TX1</td>
<td>TY1</td>
</tr>
<tr>
<td>Teacher 2</td>
<td>TX2</td>
<td>TY2</td>
</tr>
</tbody>
</table>

Table 4.1: Codes to identify interview participants

Documentary analysis

This chapter is organised into three sections of documentary analysis. First of all, a Teaching as Inquiry model outlined in the New Zealand Curriculum (Ministry of Education, 2007) will be analysed using the criteria developed by Wellington (2000). They are authorship, audience, production, presentation, intentions, style, function, genre, content, and context. Secondly, policy documents from each school, which govern and frame the context in which Teaching as Inquiry is applied, will be analysed. This will be done using the framework provided by Taylor et al (1997) as policy context, policy text and policy consequences. Thirdly, school procedural documents that operationalise Teaching as Inquiry will be
analysed using the same framework as the procedural documents. Each form of analysis is concluded by summarising the key findings.

The New Zealand Curriculum
As described in chapter 1, Teaching as Inquiry is a process model outlined in the New Zealand Curriculum by the Ministry of Education (2007) in figure 4.1. Its context is that it is included as one component of effective pedagogy. These are approaches to teaching and learning that they consider to have a positive impact on student learning. As the model is a common and binding document used in New Zealand Secondary Schools, the following analysis aims to assess its quality as a guiding process for schools to follow.

The origins and authorship of the model stem from the Social Sciences Best Evidence Synthesis written by Aitken and Sinnema (2008). The research aimed to “identify, evaluate, analyse, synthesis and make accessible, relevant evidence linking teaching approaches to enhanced outcomes for diverse learners” (Sinnema & Aitken, 2011, p. 31). The model has been lifted from the Social Science Best Evidence Synthesis research into the revised New Zealand Curriculum, published in 2007. The intentions of the model align with a shift in focus from the previous curriculum, which was more outcomes focused in nature. The model promotes teachers to analyse their own teaching in relation to a constantly changing context, where no one strategy is likely to meet the needs of all students. The model’s inception came from research and so the information it contains can be considered worthy and valid.

In terms of credibility, the document portrays the Teaching as Inquiry model accurately in terms of including the three main stages of inquiry and their associated actions, such as finding out what is important, identifying strategies and capturing what happened as a result of using those strategies. However, the original model of Teaching as Inquiry described by Aitken and Sinnema (2008) goes further by expressing attitudes or dispositions that need to be adopted by the teacher in order to make the process one which leads to new learning for the teacher. In essence, it is a process of achieving greater understanding of the problem, rather than finding the answer. For example, through questioning at each stage the validity of the evidence used to base decisions on. Essentially, the model in the New Zealand
Curriculum lacks the explicit mention of metacognitive elements that are included in the original model, such as asking the question ‘is the evidence sufficient?’

**Figure 4.1: Teaching as Inquiry model**

Source: New Zealand Curriculum, Ministry, p. 35

The meaning of the document can be understood from a literal or an interpretative standpoint. The literal meaning of the document describes how no common teaching strategy is going to address all students’ individual needs. Therefore, teachers will constantly encounter different classroom scenarios in which Teaching as Inquiry should be utilised. The model’s literal meaning is therefore portrayed as a process that can be applied to classroom problems. First of all, the teacher determines what the students have learned and identifies their next learning steps. Secondly, the teacher consults research and colleagues to identify ways of addressing the needs identified in the focusing inquiry. Finally, the teacher assesses the effectiveness of the teaching. This is done in relation to prioritised outcomes. According to the description of the model, the process should be applied from very small time scales (such as moment by moment) to much longer time periods.
From an interpretative perspective, there is an emphasis on the teacher controlling and feeding the process throughout the stages of the model. For example, in the focusing inquiry, it is the teacher who determines the level of each student’s learning and what they need to learn next. This could be interpreted in different ways, as there is likely to be variation in how teachers determine the level of learning in their students and what they regard as areas of learning to prioritise; this is a direct result of the nature of how the students were assessed. From this point of view, the focus of Teaching as Inquiry is open to interpretation. The concept of individual teachers being in control of the cycle is carried through to the other stages.

*Policy analysis from school X*

The context of the policy that governs Teaching as Inquiry in school X is derived from personnel management and timetable policy. The context of the personnel management policy statement is to meet legislative and contractual requirements. These require schools to have performance management processes in place, in the form of appraisal and attestation, to ensure that staff and the school improve whilst at the same time fulfilling the requirements of being a good employer.

Professional learning is also supported at school X by a timetable policy. The context of this policy is to align school activities with that of the PPTA collective agreement. This policy is needed as school X provides professional learning time within the timetable. The policy ensures that this is balanced with appropriate non-contact time provision. The policy allows the school to direct its staff into a professional learning programme that is independent of other duties, such as planning and other administrative tasks. The policy is relevant to all teaching staff and ensures that all teaching staff have sufficient time to participate in school X’s professional learning programme. It is interesting that approval for the professional development programme is needed by the Board of Trustees. It is possible that the intent of this statement is to align in-school activities with those at governance level.

The policy text aims to clarify that time is provided for professional development activities. This is reflected in the following statement:
‘Each Friday the timetabled classes will start one hour later than usual to allow time for professional learning and development (PLD)’

The following statement ensures that staff take part in a professional development programme specific to the school. This ensures that staff have sufficient opportunity to participate in Teaching as Inquiry.

‘All teaching staff are required to participate in the Professional Learning and Development programme.’

The values contained in this policy are clearly aimed at providing quality learning experiences for teachers and students. The intent of the policy text is made explicit; the benefits gained by the provision and use of professional learning time must be greater than the learning time lost for students. These values are articulated through statements such as:

‘The PLD programme will be well structured to ensure that the lost quality student learning time is well utilized’

The following statement helps align leadership and management with governance:

‘The PLD programme will be presented to the BOT for approval’

The consequences of this policy are the subsequent actions required of school leaders to manage and lead teachers in a weekly professional learning programme. The gains made from the programme must outweigh the lost student learning time. Leaders must organize professional learning that is well structured, aligns with the governance of the school and involves all staff. The policy does not specify the nature of the professional learning that takes place, how it is to be implemented, or the kind of outcomes it attempts to improve. Furthermore, the policy does not mention Teaching as Inquiry. However, the policy ensures that all staff become engaged in a form of professional learning at a set time each week. Finally, Board approval for a professional development programme is required by leaders before its implementation. It makes sense that Boards of Trustees must be aware of the process of Teaching as Inquiry and its benefits if they are to endorse its use.
Policy analysis from school Y

The policy governing Teaching as Inquiry at school Y is a policy titled ‘Performance Management Appraisal System’. The context of this policy is located in the schools legislative requirements for managing its staff by ensuring that there are measures for the management of staff performance. The role of the policy is to ensure the school carries out activities such as implementing appraisal, attestation, and professional development. The policy then articulates many points which cover specific procedures for operationalizing performance management and appraisal.

The Performance Management Appraisal Policy is framed by the articulation of key responsibilities for the principal, senior and middle leaders. These aim to relate key aspects of the policy, such as the management of appraisal, professional development and self-review, towards professional and schools goals. For example:

‘Appraisal is explicitly linked to the school development goals and professional development programme’

The policy aims to make the appraisal process fair and to ensure that an appropriate level of support is provided to fulfil appraisal practices. Although Teaching as Inquiry is not specifically mentioned, aspects of the policy that could relate to Teaching as Inquiry or other reflective practices are articulated. For example, Teaching as Inquiry could be implied through the statement that:

‘Self-review is a critical part of the appraisal process’

Collaborative and evidence-based reflection could also be implied through the statement that:

‘Mentoring, including at least one classroom observation, is undertaken throughout the appraisal period’

The consequences of the policy are related to the level of interpretation of the policy. Firstly, as there is no specific mention of Teaching as Inquiry as an aspect of professional development, the policy could imply that all professional development opportunities relate
to school goals through appraisal goals. Secondly, the policy reinforces a key aspect of appraisal in that it is a confidential process, stated as:

‘The appraisal is confidential to the appraisee, appraiser, and the Principal and the final appraisal record (and/or any other relevant information) is confidential and shall be kept by the Principal for the period for which the documentation is current’

The consequences of this statement could have implications for collaborative reflective inquiry, in that collaboration would have to be restricted to the appraiser and appraisee due to the nature of appraisal being a confidential process. Furthermore, the fact that the policy requires that appraisal be recorded could have consequences in that evidence from Teaching as Inquiry may be documented. Therefore the Principal will be aware as to the degree of success teachers have when using Teaching as Inquiry.

Key Findings
Analysis of the overarching policies in both schools that govern professional development reveal that there is very little specific information in direct relationship to the support, resourcing and development of Teaching as Inquiry. Furthermore, there appears to be a lack of guidance for leaders as to the systems and processes that need to be created. Also, the policies are dominated by regulatory information that governs the implementation of appraisal and performance management.

Procedural documents from school X
Schools X’s key document in relation to Teaching as Inquiry is the Inquiry for Professional Growth booklet given to all staff. The context and the intentions of this document are captured by its rationale as:

‘Professional Inquiry is a process for improving teacher knowledge, confidence and competence and strengthening department and school systems with the aim of improving outcomes for students.’

The booklet positions professional inquiry as having four contributing areas. These are: Professional Growth - Teaching and Learning Inquiry and professional development;
collegiality; appraisal for teachers; appraisal for leaders and managers. These four areas form key processes that teachers must engage with. One of these is to complete professional learning inquiries. These are related to individual, faculty and school goals. As staff go through the process of professional inquiry, they are required to meet regularly with appraisers. Evidence from the application of Teaching as Inquiry can contribute towards the practicing teacher criteria. The role of the appraiser is to discuss the goals, carry out classroom observation and evaluate the teacher with a final end of year summary.

The intentions of the document add structure and a timeframe to the process of professional inquiry. This is likely to help leaders ensure that inquiry is carried out in a manageable time frame and to help guide teachers through the process. This is achieved through templates, checklists and evidence collection boxes for both teachers and appraisers. For example, the front of the document uses the practicing teacher criteria and school charter to help focus teachers on a suitable goal that works towards faculty targets. The second half of the document reflects personalised inquiry, whereby teachers follow a structured Teaching as Inquiry framework. This begins with discussion with an appraiser, using video analysis and observation of classroom practice to highlight areas for improvement. At this stage, peer observation, as well as observation by the appraiser, is used. The teacher then follows a series of reflective questions found within the inquiry templates. Finally, teachers set two goals: one relating to faculty improvement and one that is personalised to the teacher. However, personal goals are only personalised to the extent that they remain within departmental development areas:

‘This is an individual goal and more personal to your own professional development, but it needs to be located within faculty or department target areas’

Several levels of potential conflict and tension reveal themselves in the processes highlighted in the booklet. First of all, since observation is a tool used to reveal areas of classroom practice for development, peer as well as appraiser observation could reveal divergent perspectives on classroom practice. This could lead to confusion for the teacher. Secondly, appraisal is a confidential process and therefore introducing peer observation breaks confidentiality if the observation data is discussed in the appraisal arena. Finally, tensions between appraisers and their appraisee may occur if inquiry has revealed an area of classroom practice in need of development which is unrelated to faculty priorities. It is in
these respects that it appears the appraiser is a gate keeper of inquiry and that their perspective is likely to influence the Teaching as Inquiry process.

**Procedural documents from school Y**
The school Y appraisal manual is authored by senior leaders who are responsible for appraisal. However, it is based largely on a template found in Ruia Teacher Appraisal for Maori Learners Success (Ministry of Education, 2012). The overall intention of the document is to present appraisal as a learning process for staff afforded through the identification of:

‘a relevant and personally identified context’ (p.2)

Teaching as Inquiry is presented to staff on page 4 of the booklet and is positioned as a fundamental aspect of appraisal. Teaching as Inquiry aims to underpin certain key characteristics of teachers. These are teachers who:

- Are effective and reflect on the impact their teaching has on learning
- Have an evidence based approach to considering their teaching and learning
- Are enthusiastic learners themselves, participating in professional development to improve their knowledge and capabilities as learning leaders
- Work in a collegial and co-operative fashion with other staff members
- Demonstrate initiative, imagination, and innovation in their planning and teaching
- Accept advice and know when to ask for it

Demonstration of these characteristics can be used as evidence for meeting the requirements which the Practicing Teacher Criteria summarised, as follows:

‘The Appraisal process provides opportunities for teachers to gather supporting evidence to demonstrate that they are meeting the Registered Teacher Criteria (RTC)’ (p. 6)

From the above evidence, it appears that the booklet could lead to confusion during the appraisal process. For example, the booklet presents two different sets of desired characteristics: first of all, a set of qualities underpinned by inquiry practices and, secondly, those resulting from a teacher’s reflection of their qualities against the practicing teacher criteria. It is the latter of these two sets that are used for evaluative purposes. Evaluation is
informed by evidence gathered by teachers to satisfy the criteria of the Practicing Teacher Criteria. However, in order to gain that evidence, teachers need to be competent users of the Teaching as Inquiry process. Therefore, Teaching as Inquiry indirectly underpins the whole appraisal process. This is emphasised further by the fact that Teaching as Inquiry is presented in the booklet before the Practicing Teacher Criteria. The consequences for leaders are that they are in control of two sides of the same coin. On one side, they are responsible for developing teachers as effective users of the inquiry process. However, on the other they are also appraising staff according to how effective they carry it out. This dichotomy of roles could potentially cause conflict between appraisers and appraises, undermining the developmental nature of appraisal.
Findings from semi-structured interviews

Forms of teaching as inquiry
School X uses several forms of inquiry and other supporting concepts, such as assessment for learning. In terms of the process model, multiple forms of inquiry are provided to staff in the Inquiry for Professional Growth Handbook. Teachers may choose from a variety of formats that they feel comfortable with and suit their own needs. Another part of the school philosophy, according to SLX, is that inquiry is an iterative process and that, whilst some teachers may start new inquiry topics once a cycle is completed, others may continue on a similar theme:

“people have the flexibility to be iterative in their focus or to change their foci and I think that depends a little bit on where that teacher is at in their personal growth as a teacher” (SLX)

The form of Teaching as Inquiry described by SLY at school Y used a model known as the Deming wheel and was devised independently of the Teaching as Inquiry model as described in the New Zealand Curriculum (2007). SLY thought it was a good model to help staff through the process of self-review and improvement through the provision of particular points in the cycle where specific actions have to be followed. The results of the cycle’s application form teachers’ goals for the following year:

“I think the model that we have, an overarching thing is a Deming wheel model by which you’d plan. The sort of concept that you plan, you check, you act, you plan, and the cycle continues like that and we always look where we are in terms of those steps” (SLY)

The form of Teaching as Inquiry was described by middle leaders in terms of the stages they went through during inquiry. At school X, the form of the model was also described in terms of the steps an individual or group may use to approach Teaching as Inquiry:

“So we look at the data we’ve got on them such as English PATs and possibly some of their previous year’s results. Or it might be that they’re just not really capturing vocab at all. Whatever it is that’s the issue that’s been identified, we then come up with a plan to see if we can implement some strategies to address those issues. Carrying out the plan over a period of time and relooking at some of that data, so whether we’ve done a pre-test at the beginning of that and then a post test, or whatever the assessment type might be. It might be anecdotal, we
often get some student feedback as a part of the process anyway, and then evaluating the plan in terms of did it achieve what we wanted? If it did, keep going, if it didn’t or if it raised some new issues, then next step is new planning. So it’s cyclical and iterative...and continues until either we get 100% success or at the end of the year.” (MLX2)

Both middle leaders at school X described that staff were expected to carry out two cycles of inquiry in one year. MLX2 spoke of how another department deviated from this pattern. However, it became clear that this was not considered negative in any way, as it was seen to be more important that staff were following the inquiry cycle and using the flexibility built into the various models within the staff professional learning handbook. MLX2 points out:

“getting teachers to really actively incorporate it and integrate it into their normal practice. It’s not something that’s an add on, it’s how we teach. So that's certainly something that I see happening more and more and people understanding here, it’s how we do things at school X, it’s part of our role as a teacher” (MLX2)

At school Y, MLY2 responded in terms of the stages of the process:

“So we do it through student voice, their background knowledge, we have made some stronger links with our feeder school so we also use the testing they come in with, the asttle data, plus their own ideas”

Interestingly, MLY2 could relate what they were doing to the Ministry of Education (2007) model, but also recognised their work as involving aspects of action research. This allowed immersion in the classroom problem. Benefit was also identified in placing more importance on recording the process to make it more formalised.

The teacher perspective recognised the origins of school X's model in the New Zealand Curriculum (2007) in terms of its form. When the researcher referred to the Teaching as Inquiry model, TX1 replied:

“it’s very similar to that in terms of as a school we’re promoting that and my inquiries have followed the same sort of lines”

In terms of time frame, the school requires teachers to carry out two inquiry cycles a year.
However, TX2 saw the benefit of using the model in smaller scale cycles. For example:

“You can do smaller ones. So last year our focus was on lots of smaller activities, so I would’ve said I did maybe 4 or 5”

TX2 could relate to the use of the Teaching as Inquiry cycle in terms of shorter time frames and how it applied to specific classroom issues over a smaller time frame, as opposed to two Inquiry cycles per year. For example:

“So last year our big focus would’ve been growth mindset but then in that you would have smaller ones”

At school Y, teacher TY2 was familiar with the model described by the Ministry of Education (2007), but did not directly describe a model outlined at school Y. However, self -review was described in terms of:

“It sort of occurs in 2 phases, we get the feedback and when we analyse it and we break it down into 2 categories; what is the consistent theme that we are going to do next unit and what is a consistent theme that we are going to do for the same unit next year?”

Similarly, TY1 described the form of Teaching as Inquiry in terms of the stages:

“we identify a problem for example, and identify an innovation we could use to address that and improve everybody’s learning and then we come back and reflect on it and then we make changes, we put those changes back into our planning”

Key findings

In summary, both schools interpreted the Teaching as Inquiry model from their own perspectives and modified it based on the beliefs of senior leaders, the school’s historical use of self-review and its interpretation by individual teachers. In one school, for example, Teaching as Inquiry was the process espoused, but it contained aspects of other models, such as assessment for learning, action research and reflective, collaborative practices. In the other school, a different model of inquiry was described between leaders and teachers. In terms of time scale, the findings above show that leaders and teachers apply the model in different time scales.
The purpose of Teaching as Inquiry
At school X, the overarching purpose of Teaching as Inquiry, according to SLX, is based on the following:

“I see the purpose of inquiry is improving student learning outcomes, but in doing that it’s about helping the teacher to be more discriminating and take more responsibility for developing adaptive expertise. It’s kind of empowering teachers” (SLX)

At school Y, SLY saw the purpose of the Teaching as Inquiry model as a way of highlighting weaknesses in ability to meet student needs. This was rationalised by SLY in terms of students’ learning opportunities:

“We know we’ve got a group of kids who, unless we teach properly, won’t achieve. They’re not going to get their learning anywhere else. It’s got to come from us. So we’ve got to identify the parts of practice that are weaker”

SLY also recognised the Deming wheel model as a mechanism that should be applied to self-review at the individual teacher level, but also at the senior leader level.

It was seen by MLX1 that Teaching as Inquiry was a mechanism for changing practice. MLX1 said:

“instead of being given a book about what a classroom should look like and so go away and follow those guidelines, you get to see what you’re doing and maybe what you need to change”.

MLX2 recognised the purpose as:

“making us more responsive to the students that are in front of us, not the ideal student or the student we want them to be. It makes us better teachers and it improves student achievement and self-belief, self-efficacy”

At School Y, one middle leader related to Teaching as Inquiry as a process that directly affected the teacher, but also saw benefit for other staff in terms of sharing the success of new ideas applied to teaching practice.

“I think for our own benefit and for other peoples’ benefit as well because there is a lot of learning going on through that process” (MLY1)
Teaching as Inquiry was also recognised as a means of addressing school goals in a practical and learning focused way. Another middle leader considered the purpose as ultimately for the benefit of student outcomes through the testing of assumptions prior to teaching:

“The main purpose is to improve the outcomes for your students but also to improve you as a teacher. You are improving your reflective practice such as if it didn’t work, so why didn’t it work, what do my students believe were the successful or engaging parts of what they were learning and the focusing part at the beginning? What you perceive as being important to them isn’t always what they perceive as being important” (MLY1).

Another middle leader recognised the purpose of Teaching as Inquiry in terms of the improved relationships with students:

“I would think it would improve the relationships you have with the kids because students will have their voice through it and they’ll be engaged. I think that your classroom culture and your classroom atmosphere would be vastly improved if you were engaging in this all the time” (MLY2).

Another purpose was identified in the emergence of opportunities for learning:

“It’s always exciting when teachers come and say they’ve tried this. Ideally you are creating people that are really reflective about what they are doing, For example, not that we got some good results there, but be really reflective about why, what was the reason why we got those results?” (MLY2)

The purpose of Teaching as Inquiry was described at the teacher level as:

“very much about enhancing teaching and learning” (TX1).

“It definitely meets the criteria for growing as a teacher in terms of you’re constantly going to be trying new things and learning new things and giving something a go” (TX2).

It was also viewed as important in terms of teacher professional development. TX1 pointed out the need for Teaching as Inquiry to be balanced within an overall professional learning framework:
“The fact that this [Teaching as Inquiry] doesn't sit alone as our appraisal and there are other targets we have to meet through the goals that we set. I think this gives a layer to those that you’re able to meet the goals that you’ve set, but I think there needs to be a balance between professional development and the inquiry cycle, because I do see them sometimes as being quite separate”

Separating Teaching as Inquiry from other appraisal activities was justified because:

“if I’m a teacher who isn't as confident, I don’t know what I don’t know, therefore what am I meant to be inquiring on? Professional learning also needs to be on teaching practice itself, and effective teaching practices” (TX1)

Furthermore, TX1 recognised that once goals had been set, Teaching as Inquiry was a suitable mechanism to meet the goals teachers had set.

**Key findings**

When comparing senior leaders’ responses, slightly different views of the purpose of Teaching as Inquiry emerged. Ultimately it was recognised as a means of improving student outcomes. However, school X espoused that this was achieved through raising teacher abilities to recognise and respond to classroom problems themselves. However, school Y used Teaching as Inquiry to highlight weak areas of practice. Interestingly, middle leaders recognised the purpose of Teaching as Inquiry from several perspectives. For example, as well as meeting individual, faculty or school goals, both schools recognised testing assumptions as a key purpose and that by challenging assumptions, this would lead to improving teachers’ practice, evaluating course design, as well as improving self-belief and forging positive teacher/student relationships. Teaching as Inquiry also provided professional learning for other staff encountering a similar classroom issue. Teachers recognised that Teaching as Inquiry enabled them to grow professionally and enhance teaching and learning.

*The application of Teaching as Inquiry*

Teaching as Inquiry at school X is a process that teachers use to highlight and work towards individual, faculty and school goals. Teachers are required to carry out two inquiry cycles
over the course of a year, which are managed by the Head of Faculty and supported by a network of coaches. Teachers are also supported by colleagues, who work together in small, facilitated, professional learning groups in allocated time once a week to collaborate as they each go about applying Teaching as Inquiry to those goals. The beginning of the year is used for dialogue between teacher, middle and senior leaders to highlight appropriate goals for teachers to work on. At the end of the year, staff are required to present their work back to a group of colleagues who have the opportunity to critique each other’s work. The two inquiry cycles become a basis for teachers to be appraised.

At school Y, Teaching as Inquiry is also used by teachers as a mechanism to meet individual, faculty and school wide goals. Formally, for the purpose of appraisal, teachers are given a single school wide goal and, in addition, devise a personal goal. Informally, Teaching as Inquiry is also used as a mechanism to meet every day classroom problems.

Teaching as Inquiry is applied by teachers at School X as a mechanism for devising and working towards goals by:

“what’s come up through faculty review or analysis of grades at the end of the year, so that’s something I want to focus on in my inquiry. So for example in Science the whole faculty has identified that they’ve got a literacy issue, so it’s a faculty goal”. (MLX2)

Faculty goals then become a focus for individuals:

“you’ve identified some issues for your faculty, so we are encouraging people to, that’s their faculty goal, but to actually use it as their inquiry as well” (SLY)

The relationship between Teaching as Inquiry and appraisal at school X is that:

“participation is part of appraisal, but not the consequence or outcome. If you’ve got a teacher who’s not taught something that well and that’s demonstrated in poor student grades, and they’ve identified what that issue is, for example, it could be lack of differentiation, then they have a faculty goal which they can then use as their inquiry focus” (SLY)

At school Y, SLY saw the Deming model as being applied to any school issue or problem. For example:

“I guess there’s lots of little cycles going on, but in terms of the big cycle, it’s the
annual one, by which you’re planning your goals for the following year. For example, in terms of curriculum, working out which curriculum units you’re going to use next year. But also teachers use it for their own teaching and learning as they go, well I’ve just done this unit now, let me just see how it’s gone. So there’s like little wheels inside, then the big wheel going over” (SLY)

Middle leaders at school X apply Teaching as Inquiry as a mechanism for teachers to help meet school and personal goals by highlighting departmental and individual professional development needs. The middle leaders’ role in this process is to:

“Encourage them [teachers] to bring what we want to do for next year’s focus along when we are analysing data at the beginning of the year. This involves reflecting on each class in order to help set this year’s goals. While we have a broader faculty goal or focus, we have the flexibility for people if they want to work on a particular thing” (MLX2)

MLX2 recognised the application of Teaching as Inquiry in relation to shifting trends in professional learning at school X that involved more collaborative practice. For example:

“when I first came, professional learning was largely something that was done to us, we’d come and have a guest speaker and then go away again and it felt like we had a multiple, or just focus after focus, all these things that we had to do. It got to the point where we can’t do any of them because we don’t have enough time to implement. Now, professional learning is more personalised and people feel like they have had real input into that because we have developed the faculty goals collaboratively” (MLX2)

Continuing on a collaborative theme, professional learning also took the form that:

“we looked at a variety of different contexts and assessing/self-assessing inquiry practice from different ways of interrogating our practice and reflecting on it and the different ways of being a critical friend for a colleague as part of their inquiry process” (MLX2)

In the case of school Y, Teaching as Inquiry is also applied as a mechanism for meeting
school goals and highlighting the nature of personal goals. In fact, MLY2 thought that the model should be applied when making any decision. Meeting school wide goals is supported through centralised professional development. Departments and individuals then used Teaching as Inquiry to work towards this broad goal by focusing on more specific aspects within their individual settings. Other areas for a Teaching as Inquiry focus arose from departmental review. Teaching as Inquiry is also used to highlight new goals for the following year.

One middle leader had commented on how Teaching as Inquiry is being applied to assist curriculum reform. Focusing inquiry was often used at the beginning of the year to gather information about a new cohort of students. MLY2 commented that:

“we’ve rolled it out as a junior focus and we’ve done quite a bit of changing around with our junior programme, so we have used it collectively as a team has been at a junior level. We sat down and looked at, well what do we perceive to be important? And sat down with student voice and came up with some ideas holistically, so for example at year 9”

At school Y, one middle leader recognised the superiority of Teaching as Inquiry as a means of professionally developing staff over more traditional forms of professional development.

“I think it helps you create relevant PD, than not just going on something like a generic course” (MLY2)

As well as being more relevant, Teaching as Inquiry also enabled changes to practice to be more manageable and therefore be carried out:

“Sometimes you got to PD and you get really excited about stuff and then you come back to school and kind of get swamped by it” (MLY1)

The concept of making the purpose of Teaching as Inquiry clear was crucial to the professional development programme at school Y in terms of its positioning. For example:

“the first time we did it. It was a bit of misinformation, we were all a bit confused about, so what are we doing this for? Some people saw it as an appraisal tool” (MLY2)

Teachers at school X apply Teaching as Inquiry to faculty and personal goals. TX2 chose
one of four faculty goals and, in addition, personal goals were negotiated. This process is carried out at the beginning of the year.

When asked what aspect of their role Teaching as Inquiry was applied to, TX1 gave the example of feedback to students and, interestingly, this was maintained over a long time period. For example:

“the last few years have been solely around feedback. I tend not to change my inquiry every year, but rather hone in on feedback and I’ve done it around juniors and seniors and what levels of feedback are required for, sort of, a) their age junior or senior, but also the feedback that I’ve been giving and receiving. So that’s the majority of the work I’ve been doing” (TX1)

It was pointed out by TX1 that sharing the results of Teaching as Inquiry with a collaborative network for professional learning would be a positive future application. TX2 saw the benefit of viewing inquiries of colleagues within the same faculty and between faculties, in that it provided stimulus to try new things. TX1 also hypothesised the benefit of between school collaboration.

In school Y, TY1 applied Teaching as Inquiry to:

“The review of what you are teaching and how you are teaching it. Also, the review of our schemes of work that you are teaching from. We apply the cycle strongest to our junior programme because of the recent innovations that have happened there”

TY2 described how Teaching as Inquiry is applied to school and individual goals. One goal was organised centrally in relation to a whole school initiative:

“that’s driven one of our appraisal goals for us, we didn’t have a choice on that”

When discussing personal based inquiry at the individual classroom level, two key aspects in identifying and working towards inquiry topics were collaboration and student voice. For example:

“A colleague who also teaches my class alerted me to the students’ needs around
literacy, following basic instructions, and processing information” (TY2).

Key findings

Both schools apply Teaching as Inquiry to school wide and personal goals. However, two key differences emerged between and within each school in how the model is applied. For example, school X manages the Teaching as Inquiry process by providing a schedule for teachers and applying mandatory check points throughout the year. This is achieved by using timetabled meetings exclusively for inquiry based and facilitated discussion with appraisers. In school Y, the SLT determines the school wide goals and directs teachers to conduct Teaching as Inquiry in these mandated areas.

At the individual classroom level, teachers have greater freedom and teachers are trusted to select appropriate goals. Furthermore, less surveillance is provided at school Y and teachers are trusted to implement the model themselves at the classroom level. In school X, goals that relate to school wide objectives are co-constructed. In terms of time scale, leaders conceptualised Teaching as Inquiry as a half year or full year process. In contrast, teachers relate more to the day to day application of Teaching as Inquiry to smaller scale pedagogical adjustments.

Teaching as Inquiry and appraisal

The relationship between Teaching as Inquiry and appraisal was described by SLX as:

“part of appraisal, but not the consequence or outcome” (SLX).

When asked how well Teaching as Inquiry meets the needs of appraisal, SLX described that:

“I think that it definitely does both. Increasing the capability of teachers. Teachers want to be here and if teachers are doing something that they think is purposeful, then they’re going to buy into it and make it work and so I think teaching as inquiry and inquiry as we’ve got it running in our school, is not something extra that teachers have to do, it’s actually part and parcel of their everyday teaching”
At school X, leaders require teachers to take part in inquiry:

“participation in inquiry is a part of our overall performance management. If a teacher’s not doing inquiry, they are not meeting the requirements of the Practising Teacher Criteria. We are also recognising that in the inquiry journey of a teacher, really being able to dig deep and interrogate their assumptions and the judgements they are making, everyone’s at a different point on that journey” SLX

Structures are in place that ensured staff were compliant with appraisal practices. For example, the use of documentation in the staff inquiry booklet that is implemented by appraisers (Heads of Faculty):

“I get HOFs to fill this out with their appraisee and that’s marked off by HOFS and I get a copy of it, so I know the whole process has been followed. Heads of Faculty appraise their HODs and TICs, who then appraise other people in their faculties, so it’s a really distributed model in our school” (SLX)

Although high levels of engagement occurred at school X with inquiry, other structures ensured all staff were using it. For example:

“If a Head of Faculty, sees that a teacher is not engaging in inquiry, I think we’re at the stage now in our school in most faculties for the Head of Faculty to then become that person's appraiser” (SLX)

Whilst it was recognised that risk taking, in terms of trying out new classroom practices, was an important part of Teaching as Inquiry, this was recognised by SLY as a potentially unsafe activity for teachers in terms of it being risky:

“we’ve got this booklet, so there’s always that tension in school of inquiry where you’re risk taking and you might do something and it’s a total flop, and linking that to appraisal and so people feel a bit unsafe about it” (SLY)

Accountability was also viewed by SLY from another perspective as:

“teachers are accountable to each other. I don’t see accountability as filling out a booklet and having a one on one conversation. But over the years it's changing, but we’ve always had some kind of public presentation of a person's inquiry.” (SLY)

When underperformance is highlighted, an initial intervention is through the use of a network
of coaches and PLG facilitators, who assist faculty leaders by supporting teachers’ inquiry:

“We’ve got a coach who has a greater time allowance and more leadership, we’ve got the Head of Faculty and we’ve got a facilitator who comes from the faculty. So that means that, I guess it’s gradually ramping up the accountability side of things where the coach and facilitator from the PLG side are working with the Head of Faculty” (SLY)

In addition to promoting teachers’ participation in inquiry, coaches are also used to ensure Heads of Faculty lead Teaching as Inquiry:

“The coach talks to the person, we see some kind of improvement, but at some stage they will have to talk to their appraiser and kind of formalise the leadership of their faculty in terms of Teaching as Inquiry, into their personal, into their appraisal development” (SLY)

When working through continued underperformance, the professional standards for teachers and leaders were also used as a source of criteria for intervention.

At school Y, findings from using the Deming wheel are used as evidence for individual teachers’ appraisal. SLY recognised the cyclical checking aspect of their model as a means of keeping staff on track in the inquiry cycle and improving the quality of appraisal discussion. Discussion by appraisers with leaders could take the following form:

“So if you can give me an outline of what you did under each of the four headings [of the Deming wheel], then for me that would be a success. Or, I didn’t get round to checking. Or, I saw that but didn’t get any actions, you know? So I mean, I find sometimes when you ask people to write their appraisal comments, they’re like, ‘oh, I don’t know’, which means they’re not in it, you know? So when it comes to any of those things, like appraisal goals or department goals, it’s an easy exercise because you’ve already sorted those out from your checking” (SLY)

In terms of the application of Teaching as Inquiry towards appraisal, SLY thought that:

“It does, well I’ve found it does. If people are engaging, that’s what it’s all about. I haven’t seen any better model”
However, improved appraisal discussion was reliant on teachers having completed the various phases of the Deming wheel model and engagement with the process was needed as a pre-requisite to its effective implementation.

“In the end you can’t force people to do these things properly if they haven’t engaged in it. If it’s all...we used to have the checklist of the registered teacher criteria and you had to tick against all the criteria.” (SLY)

Although SLY thought the Deming wheel model was an embedded process and staff were trusted to carry it out, staff still needed managing to ensure the process had been followed, which is the role of the middle leader.

According to TX2, the Practicing Teacher Criteria are used as a framework for appraisal and attestation and to help the formation of teachers’ goals. This process is managed by appraisers and evidence resulting from the application of Teaching as Inquiry contributes towards this:

“I think it supports appraisal, but it’s not the only aspect of appraisal. It’s all part of one package for us, so at the beginning of our appraisal process we’ve got the registered teacher criteria, we also use reflection on the school charter and together with our own classes from the previous year and our maybe perceived needs in the registered teacher criteria” (MLX2)

Appraisers at school X are responsible for managing Teaching as Inquiry in their respective departments. Ensuring staff have participated in the Teaching as Inquiry process is achieved through appraisers checking in with teachers that appraises have used the school’s professional learning handbook, Inquiry for professional growth. It was pointed out by MLX2 that:

“my expectation as an appraiser, when I go through this, is that all the bits are complete. You can pay lip service to that (pointing to the different sections of the inquiry model on the centre pages) but I would have a conversation about each of those and say ‘how did that go? How did you find that? What were some of the things you found difficult in your practice? What was challenging for you in that process?’”
In terms of how Teaching as Inquiry relates to appraisal, it was acknowledged by one middle leader as a positive addition to the appraisal process:

“I like it in the appraisal in that we sort of get teachers to have that vulnerability in what they need to improve on and the fact that nobody is ever perfect, and so there is always something to work on. I think it's needed in the appraisal system” (MLX1)

As a result, MLX1 thought that Teaching as Inquiry led to the view:

“it just formalises it a bit more and gives a bit of value to it"

“It built vulnerability in the teacher development process and so allowed appraisal to become a more valued activity from a development perspective because teachers saw value in the goals they set. Teaching as Inquiry has also made inroads towards making staff less ‘afraid’ of appraisal, this is because it positioned appraisal as more of a developmental process rather than evaluative process”

School X uses a system of coaches and critical friend roles to support teachers. Teachers give feedback to each other and take on the role of a critical friend:

“part of that whole cycle is that one of your colleagues in your group of three has come in and observed you and had that feedback conversation with you”

When asked about accountability, compliance is managed by faculty managers, appraisers and coaches:

“There is that check and balance of having the coach and the HOF checking in that everything is going as it should and then all of that which is in our inquiry booklet” (MLX2)

At school Y, when discussing the relationship between Teaching as Inquiry and appraisal, MLY2 commented that the results of Teaching as Inquiry were applied to the Practicing Teacher Criteria:

“It goes back to the PTC, we have a page to fill out, so it’s asking about, what
were your goals, how did you meet your goals, the evidence is on the page before. It’s kind of to summarise how you’ve met your goals, what are your areas for further development, what learning has taken place for you through this process, what are you believing as areas for further development”

It was perceived that the fit between Teaching as Inquiry and appraisal was positive:

“it definitely fits the PTC in terms of making sure you are developing the teachers’ pedagogical understanding”

MLY1 thought that the application of Teaching as Inquiry would:

“be a significant factor in improving the outcomes for teachers and students”

A cautionary note was added by MLY2 in that a possible misunderstanding among staff about the purpose of Teaching as Inquiry may be contributing to the authenticity of appraisal:

“I think it links, but I think we ran into difficulties when it was forced and seen as that whatever your inquiry is that it must be successful. For example, teachers may say I don’t want to try something new or go outside the box, because what if it doesn’t work?”

When asked about the purpose of Teaching as Inquiry in relation to the mandated aspects of teaching, it was recognised by TX1 that Teaching as Inquiry contributes towards appraisal, but only as part of it. For example:

“the fact that this doesn’t sit alone as our appraisal, that there are targets we have to meet, that there are goals we set, I think this (Teaching as Inquiry) gives a layer to those, that you’re able to meet the goals that you’ve set” (TX1).

Compliance was identified with as the need to keep leaders informed about where teachers are in their inquiry cycle, and it was recognised that Teaching as Inquiry would only meet the requirements of appraisal when it was being carried out effectively.

TX2 saw the relationship between Teaching as Inquiry and appraisal only in terms of the essential elements, such as:

“We meet at the beginning of the year and at the end of the year. We do have expectations in terms of, by this date you’ll have done your activity, by this date
At school Y, Teaching as Inquiry was perceived by TY1 as a really good tool for use against appraisal, but believed there to be variation in its use across school:

“I think in its current form, as we have it set up in our school. A bit hit and miss, the potential it has in appraisal is fantastic and appraisal should be based on that, it’s just about how we set that up and how we package that to the staff”

This was emphasised in the fact that Teaching as Inquiry was seen as more fluid and part of everyday practice, involving day to day discussion and reflection, whereas appraisal was seen as something that was a bit more forced and lacked sufficient time.

“It’s the end of term 3 now and only now has there been an emphasis to get appraisal done, we are two and a half terms throughout the year and we are now only just getting emails from SLT saying you must get it done” (TY2)

**Key findings**

At both schools, Teaching as Inquiry uses student achievement data and student voice as the main forms of evidence to help select an area of focus for inquiry. However, the process is used beyond the bounds of teachers’ professional learning. In both schools there are appraisal systems operating that comply with Ministry of Education guidelines. Both schools use evidence from the application of Teaching as Inquiry processes for appraisal of teachers by allowing this data to inform teacher evaluation. Both schools are using the Practicing Teacher Criteria as a framework for both the accountability aspect of appraisal and to help form developmental goals. It is believed, by leaders especially, that Teaching as Inquiry has the potential to make the appraisal process more authentic and valued by teachers. Teachers in this study seem to accept the high degree of integration between Teaching as Inquiry and the appraisal processes.

**The successful practice of Teaching as Inquiry**

Several elements to successful practice were highlighted by SLX as important aspects. First of all, the use of student data is regarded as important feedback information for teachers
who are trialling new strategies in their Teaching as Inquiry cycle:

“these are the strategies I used and the students are going to tell you what they thought about the strategies and how it helped them with their learning or...or not”

Secondly, the concept of instilling a risk taking culture, achieved through:

“public accountability, sharing and celebrating and reinforcing that you can try something and if that doesn’t work, it’s okay”

Thirdly, leaders conveying to staff the purpose of Teaching as Inquiry:

“My constant message has been it’s about improving student learning and engagement and motivation. It’s about our professional growth as teachers and not about appraisal”

Finally, colleagues were recognised as a source of professional knowledge:

“recognising that, within our staff, there thousands of hours of experience and knowledge that people have gathered, and it is about acknowledging all of that and learning from each other”

SLY thought that going through the process of the Teaching as Inquiry cycle methodically contributes to its success. For example:

“if I wanted to check with someone, discuss with them, then they’ve got something to put under each of the four headings. What was your planning? Action’s are probably easy enough, you just deliver it, but then what did you do to check and what actions did you do from the check? So if you can give me an outline of what you did under each of the four headings, then I’m, for me that would be a success”

Successful practice was seen by MLX1 as residing in the validity of Teaching as Inquiry. Validity is achieved by being critical of original assumptions:

“has it actually worked and then going back to your original assumptions saying well, was it really what I thought it was? And how do I change and maybe go back round again, and say okay, tweek this and does that make any difference again?”
It was stressed by MLX2 that key to a valid cycle of inquiry were in depth conversations with students about what their teachers were doing. MLX2 excitedly described how this added to the learning process:

“I think we’re really lucky. That’s one of the things that I really, really enjoy about being here, is that PLG is so valued and that the kids are really valued as part of that, and their input is important” (MLX2).

For one middle leader (MLX1), successful practice lay in the constant collaborative reflection:

“Definitely the reflection, it would have to be part of the culture in a collaborative team of teachers and I guess some quantitative data as well as the qualitative data that you get from observations, interactions and, um, some sort of time frame”

According to MLY2, the key to successful practice is that the process should be carried out with others, especially to improve the quality of reflection.

“focused planning leading to a better understanding of the students in front of them as well and also obviously wanting your strategies to be evidence based. Also conversations with your colleagues around what you are doing or research of any form. It doesn’t have to be pages and pages academic”

The teachers’ perspectives also stressed the involvement of student voice as critical to Teaching as Inquiry, as students’ viewpoints were deemed necessary to the Teaching and Learning process.

“So we sat and listened to students talking about Teaching as Inquiry based on what their teacher had done with them, and what they understood the cycle to look like, and why it was purposeful for them. And it is very small pockets of students, but for them, I think they did understand what was taking place” (TX1)

Student voice at school Y was also seen as significant in gaining teacher buy in and making the process more authentic. For example:
“the biggest gains have come from student voice, it hasn’t come from me simply changing my instruction, it has come from what did the students want out of the learning and how did they see it benefiting their learning?” (TY1)

**Key findings**

Successful practice involves making the process more authentic. This is achieved when: students are involved in the process by being allowed to articulate their learning priorities, and also to be able to comment on the process; teachers’ goals are rooted in their own context; and pre-existing assumptions are tested and reflection is an ongoing and collaborative process.

**Barriers and enablers of Teaching as Inquiry**

A key enabler in both schools is that of having sufficient time for staff to carry out the process in light of competing school activities.

Principal engagement is seen by SLX as a significant factor that enabled Teaching as Inquiry to grow at school X:

“I think the principal is totally committed to it and will talk that talk, and we’ve got the time on Friday. So that in itself means there’s a huge buy in from staff in terms of their professionalism towards Teaching as Inquiry”

A barrier recognised by SLX was the perception of staff that lots of academically focused professional reading was needed for effective inquiry.

“Some teachers think that they’ve got to go away and do a whole lot of academic reading, but in actual fact research is also about learning what works from your colleagues and what best practice already is within the school”

In school Y, SLY recognised need to streamline school wide professional learning, especially that which had little relation to important current activities. This allows time for the practice of Teaching as Inquiry:

“They’re better off doing other things. So one of the things we’re doing is to get teachers sitting around talking to each other about kids in the classroom and do
some collaborative planning"

SLY also recognised several enabling factors. Firstly, cohesion between school wide initiatives is needed. However, making cohesive links was seen as difficult if no natural links existed:

“sometimes you’ve got many things going, for example, curriculum review, appraisal goals setting, classroom delivery, classrooms. If they don’t all fit together you’re just flat out trying to join the dots without any connection between them”

A second enabling factor pointed out by SLY was the importance of employing talented teachers so that staff capacity can be improved:

“some have got real skills, are naturally gifted educators in terms of their communication, the challenge is to identify those and hire them”

Secondly, whilst SLY thought teachers were well aware of the process they are to follow, constant reminders of the inquiry process are needed, supported through collaborative discussion with other teachers. This is achieved by:

“reinforcing the ones that are doing a good job and getting them to work with the others” (SLY)

A barrier pointed out by SLY was the greater need for resourcing.

A significant enabler pointed out by MLX1 is that:

“I think we are given adequate time to get things done”

Sufficient time was given for teacher observation, working collaboratively and developing goals. Working as a department was also recognised as being beneficial. However, working cross-circularly was still useful as a means of expanding ideas.

Another enabler is the ability of teachers to use a repertoire of assessment tools, recognised by MLX2 as a prerequisite for inquiry, and that professional learning had focused on practical and creative ways to assess students.

“If we can’t collect data, how can we do inquiry?”
At school Y, one middle leader could see the enabling effect in teachers across departments working together. This was relevant in this context as staff across the school shared common goals. As Teaching as Inquiry is the mechanism to work towards those goals, MLY2 could see benefits in sharing ideas and knowledge with other departments. However, limited school wide use of Teaching as Inquiry was seen as a barrier towards working with others across the school. This was described as:

“It’s not something that is school wide and ongoing in terms of professional development, which is why you get that conflict sometimes when you talk to other areas about what they might be doing or not doing in terms of you might want to link something”

A significant barrier associated with the practice of Teaching as Inquiry was seen by MLY2 as how teachers come to terms with the process:

“I think it’s a mind-set as well for your team to get involved in doing something like this”

Another barrier was that Teaching as Inquiry had to compete with other school activities. As a result, differences emerged between departments in how Teaching as Inquiry was prioritised:

“think it’s not necessarily seen as something as really important when there are so many other things you are trying” (MLY2)

Several enabling factors were mentioned by MLY2 which facilitated staff to become more effective users of Teaching as Inquiry, in terms of it generating teacher learning.

First of all, the demographic of staff and their training was seen as important. For example:

“our faculty is younger with new staff who are really keen and who have come through this kind of process, whether it’s through study or placements” (MLY2)

Secondly, fear of the Teaching as Inquiry process was removed through working collaboratively and using dialogue between teachers:

“I think that doing it as a collective by not having everyone to do their inquiry on their own” (MLY2)

“having that collegiality and that ability to talk to each other” (MLY2)
Thirdly, positive culture has started to emerge through staff being able to experience each other’s work through observation and open discussion, which has led to greater openness to learning:

“being open to the fact that we have things that don’t work, but it’s okay that it doesn’t work as long as you think about why”

One enabler identified by TX1 is that of:

“understanding what the purpose of it is for, because I think there will be teachers who see something like this is about compliance, that they’re doing it solely because they’re being told to do it. So I think the importance is number 1, there’s an understanding why it’s important to their practice and I think transparency is important.”

The ability to make the process meaningful was also seen as important. Related to this was the need for time. TX1 expanded on this and identified that greater time allowance leads to more opportunities for reflection. That in turn enables greater understanding. For example:

“You need as a teacher to have that time to sit and reflect on practice and improve, because it’s very easy as a teacher to become complacent and get into the rigmarole of doing the same thing over and over because it worked once” (TX1).

In addition to time provision, well managed time was felt by TX2 as being important. This allowed teachers to think, plan and record the process as:

“it’s very easy to get through the year and not actually have anything reported” (TX2).

TX2 reported that Teaching as Inquiry had an annual structure in terms of milestones by when key activities are to be completed:

“it tends to be quite structured across the semester in terms of, okay, this is the day you decide what your goal is and so then you do decide what your goal is. And you know, this is the day you’re going to spend some time preparing your resources” (TX2)

Scale was also seen as a key factor in being able to implement changes to practice. When
Teaching as Inquiry was applied over a small time scale:

“I felt I could implement it a lot easier when it was little ones, rather than being one massive one” (TX2).

It was recognised that Teaching as Inquiry was carried out successfully when it was focused, practical and that the end result was achievable by the teacher. Furthermore, professional learning was provided during teacher only days.

A barrier was recognised by TX2 as too many foci. This often stemmed from the individual priorities of the senior leadership team and resulted in:

“so many other things going on that they want you to focus on at the same time, that I think it can lose the focus from what you wanted to do in the first place” (TX2)

At school Y, TY2 valued facilitated collaborative discussion, as it helped teachers understand the inquiry process and is needed when working towards shared goals. Collaboration also allowed expertise to be shared to make up for any deficits in the knowledge of individuals. This was summarised as:

“structured format, not structured content”

As in school X, TY1 stressed the use of time as a key enabling factor. Looking from a school wide perspective, TY1 felt that there was less time given to the practice of Teaching as Inquiry and more time was spent on topics that were perceived by TY1 as less important; one of these was school wide professional development.

A key barrier to the legitimacy of Teaching as Inquiry is the timely use of data. This was articulated in terms of its usefulness:

"when we first brought student voice in, what we would do at the end of the year we would set up 6 different ones for the achievement standards that we taught, so kids were potentially giving feedback on a unit that they were taught in term 1
and we felt that while term 4 is a good time to do it, the feedback and changes are lost, so if you receive some feedback based on the term 1 unit that could inform you for term 2, we were only finding that out in term 4” (TY1)

Finally, applying contextualised Teaching as Inquiry was also recognised as a significant factor in the professional development programme:

“I think people don’t value something until they can see that it can work and it can be productive, or maybe don’t want to put time into something that they don’t know is going to be of benefit to them” (MLY2)

**Key findings**

Clearly, the most significant enabling factor is that of time for Teaching as Inquiry, and that time be spent well. This is achieved in school X with time allocation within the timetable, to be specifically used for Teaching as Inquiry practices. In school Y, Teaching as Inquiry is used generally in departmental meeting time after school. Another significant enabling factor is the use of facilitated collaborative discussion. This was seen as positive as it focused discussion on learning based problems. Interestingly, leaders at school X recognised that how Teaching as Inquiry is perceived in terms of its purpose is critical to its implementation in that it is important that it is seen as a learning based model. The use of student voice was also seen as a significant stimulating factor for teachers to begin the change process.

**Leadership of Teaching as Inquiry**

At school X, leadership of Teaching as Inquiry was seen to be driven partly by senior leaders. However, leadership was also portrayed as a concept that was derived from:

“active participation within the learning community” (SLX).

Lack of engagement was thought of as being due to teachers not seeing the value of or not understanding the process. Principal leadership was recognised by SLX as important, but also individual leadership. This is manifested as:

“trying to build the skill in teachers of sitting down and asking questions of colleagues to get them to reflect, rather than it being a conversation where the observer just tells the person observing what they saw and offer advice. So the
purpose of those conversations has been trying to get the teacher to think about what they were doing and why and who has been affected for the better or for the worse by what they've done and what the next steps could be” (SLX)

One way that teachers are developed to become adaptive experts at school X is achieved through peer observation followed by subsequent discussion. Achieving this was promoted with professional learning, which focused on using listening skills to help understand experiences from another person’s point of view. Other forms of professional learning included professional reading, as well as the use of outside speakers. However, the success of these two professional learning strategies was derived from the links between them. This was perceived to help staff see cohesion in the professional learning programme and that both in school professional reading and the use of outside experts were not separate.

“it’s helping teachers make the links that there’s a variety of pedagogy that we’re going to draw on and revisit. And we’re going to use different lenses each year to examine our practice” (SLX)

MLX2 felt that an understanding by all staff of Teaching as Inquiry had taken several years. One important factor believed to help this understanding stemmed from leaders introducing the increasing use of student voice.

“One of the other things that has been important has been we collect a lot of student voice and that’s increasing over time and one of things we do is get students to come in and report back to staff about what is happening in their classes informally in a Friday PLG session. So we will be having one of those next term where students come and they say what their teacher has been trying with us and this is how it’s gone” (MLX2)

Middle leaders recognised the benefit of increasing the level of collaboration, not just within departments, but between themselves to broaden access to new ideas. Collaboration allowed modelling for other staff to observe good practice. For example:

“it’d be nice to be able to see some examples of other people’s inquiries from the year before, because that always gives you stimulus to go, ah, that actually happens to me, before you’ve even thought about it. So you get to see people take risks” (MLX1)
Another positive consequence of working collaboratively was perceived by MLX2 as distributing leadership, leading to faculties identifying and working towards their own goals:

“we couldn’t have done that at the beginning, we didn’t have the skills to do that and I mean the HOFS, let alone the teachers, it’s certainly something that we have developed as we go along.”

MLX2 commented that leadership was needed to maintain teachers’ efforts towards common goals:

“we are all trying to focus on our faculty goals and so if someone heads off in a direction that is completely unrelated or isn’t on board then that might look like a really good inquiry to the coach, but for the HOF it might look like they need to gather that person in a bit and help them to understand where we are going and maybe just have a conversation around that”

It was thought by MLX2 that school X had been on a journey and, several years ago, there was a certain fear among staff in relation to some aspects of the Teaching as Inquiry process. For example, the generation and use of student voice about their teachers. However, this fear had reduced over the years and staff are more accepting of student voice.

Whilst it was recognised as the middle leaders’ role to manage Teaching as Inquiry, some confusion was raised in relation to where leadership of Teaching as Inquiry lay, as expertise was recognised in an individual senior leader. This was reflected in the following comment:

“I wanted to step back and go, you guys are the ones with all the knowledge and I’m pretty much like my staff in that I am in the middle of this and trying to work my way around it. I haven't been given any formal coaching on how to teach it”

(MLX1)

In school Y, it was recognised by MLY2 that leadership of Teaching as Inquiry was the responsibility of middle and senior leadership:

“I think it’s a collective, I think senior leaders and middle leaders need to role model and actually be doing it and putting it in place and supporting your teaching staff to understand it, to do it”

One middle leader recognised the significance of Teaching as Inquiry as a means of effective
pedagogy by recognising that it should be used

“Every time we’re making a decision about what we want to do in the department, we should be going back to this model” (MLY2)

However, for this to happen, Teaching as Inquiry needed to be an embedded process:

“one of the issues in this school, especially in a large school like this, we never get the time to embed anything and this kind of process needs to be embedded in the way we operate and I’d say it’s not” (MLY2)

Furthermore, MLY2 thought that if Teaching as Inquiry was to become more embedded, then it would have to be prioritised over other initiatives. Another leadership issue highlighted was the inability of MLY2 to appraise all the staff in the large department due to the overwhelming number of members and the lack of time allowance. As a result, the faculty leader was unaware of the appraisal goals of most of its members.

It was acknowledged by TX1 that, over time, greater transparency had emerged through the exchange of information about teaching and learning. TX1 thought that this had emerged from the sustained promotion of Teaching as Inquiry for several years.

“observations are expected and people are open to coming in to talk to you and the kids. Because we’ve been doing it for so long now, the kids know - they don’t care about another teacher coming into the classroom” (TX2)

TX1 and TX2 felt it much easier to apply Teaching as Inquiry in their own setting when senior leaders modelled the inquiry process:

“this year in our teacher only day we did another circuit of things where the exec presented activities that they’d done in class that linked the key learning habits, so they were showing us practically, this is something I’ve tried, this is how it worked, this is where it didn’t work, this is what I’d do next time. So you’ve seen an actual practical application of what you could do. And it makes it easier for me personally anyway to say, okay, I’ve seen it work and I can think how it could work in my classroom and actually apply it” (TX2)
In school Y, TY1 acknowledged the work of the Head of Department in promoting and reinforcing the use of student voice to the point where, in TY1’s department, its use is considered standard practice:

“it has become standard practice that student voice must be part of our moderation pack, so when we include the moderation samples, the achievement standard, we must have the self-review graph and also the student voice comments”

At school Y, teachers have a school wide goal set for them, as well as a personal goal. TY1 balanced the foci of Teaching as Inquiry topics between those mandated by SLT and those derived through personal classroom reflection:

“in terms of the inquiry project that we want to do, we are directed by SLT, for example they say that your inquiry is going to be about this, this is what we want the students to get out of it, rather than us having the professional judgement and looking at that class and saying what do they need the most? And going from there” (TY1)

The effect of this was articulated as:

“your motivation becomes less and less, because it is less directed at you”

TY1 identified that, to make professional learning more personalised, leaders need to assign time and scaffold the process for staff in an easy to manage format. Leaders could also make Teaching as Inquiry more scaffolded by providing guidance in:

“how to start it, how to do it. How do I come up with this focusing inquiry, where am I going to get my strategies from, yeah, so I think it maybe needs to be scaffolded more to people to really understand how it could work for them and relate to them”

Key Findings
Both schools are trying to promote the leadership of learning concept throughout the school. They aim to do this by positioning the teacher as the agents of change and using the Teaching as Inquiry model as the mechanism of change. By doing this, both schools believe that it will generate a culture of learning. Both schools attempted to develop key dispositions in teachers. These to be able to work collaboratively using open dialogue about student data. This involves the ability to collaborate, produce and analyse data and to have professional freedom in an autonomous learning culture.
Chapter Five
Discussion of Findings

Introduction

This study had three aims. These were to find out:

- In what form and for what purpose do New Zealand Secondary Schools use Teaching as Inquiry?
- In what way do New Zealand Secondary Schools apply Teaching as Inquiry?
- What are the characteristics of successful practice and how are they enabled or prevented?

This chapter discusses the key findings outlined in chapter four in relation to the literature base from chapter two. I have arranged the discussion into three key areas. These are: forms and purpose of Teaching as Inquiry in New Zealand Secondary Schools; how and what do schools apply Teaching as Inquiry to? Finally, the Leadership implications of Teaching as Inquiry.

Purpose and application of Teaching as Inquiry

The purpose of Teaching as Inquiry

This study revealed differences between and within schools with regard to the intended purpose of Teaching as Inquiry. This finding adds to research by other authors that Teaching as Inquiry is yet to be understood universally within education (Benade, 2014; Driver, 2011; Education Review Office, 2011, 2012; Sinnema & Aitken, 2011). Interviews revealed a general understanding that Teaching as Inquiry can transform a teacher’s practice, which in turn ultimately has the ability to improved student outcomes. However, a difference arose between schools, and also the level of the school hierarchy, as to how Teaching as Inquiry goes about enabling those shifts. For example, in one school, Teaching as Inquiry was viewed by the senior leader as a means of increasing the capacity of teachers so that changes to practice emerge from teachers themselves. Increasing capacity is cited by the
Education Review Office (2012) as a means of creating conditions for effective inquiry. However, according to Harris (2002), building capacity can only be achieved through collaborative practices. From a slightly different viewpoint, Teaching as Inquiry was seen generally by teachers as a means of finding new strategies to meet the needs of their students. These two perceptions lead to what Driver (2011) describes as procedural versus a conceptual understanding of Teaching as Inquiry. Improving teacher capacity was suggested in the interviews by leaders and also espoused in supporting documents created by leaders. When the purposes described above were compared to the original model of inquiry, subtle but significant differences emerge. The original model put forward by Aitken and Sinnema (2008) described the purpose as one of posing and understanding classroom problems having prominence over that of finding solutions to classroom problems. This suggests that solutions may not obviously present themselves. Furthermore, due to the fallibility of evidence, possible solutions will always be conjectural depending on how teachers perceive the contributing evidence in relation to the constantly changing context. The presumption that Teaching as Inquiry will lead to new strategies could be considered an oversight in relation to its original purpose.

This was echoed at the middle leader level, although accompanied by responses reflecting a more operational purpose to inquiry, such as for addressing school goals, sharing new ideas and highlighting areas of practice for change. This research therefore, recognises the multiple perspectives from which the purpose of Teaching as Inquiry is viewed. On one hand, if it is viewed as capacity building then it needs to be accompanied by certain key dispositions that test teachers’ beliefs and assumptions (Benade, 2014; Sinnema & Robinson, 2007). On the other hand, a more operationalised perspective of Teaching as Inquiry is associated with its perception as an instrument for simply finding new strategies. The former of these two perspectives emphasises the testing of assumptions as a key part. This links to the concept of adult learning, promoting the concept of double loop learning, a scenario considered superior to single loop learning where assumptions remain untested (Senge et al., 2000). Interestingly, in school X, three out of five interviewees mentioned the testing of assumptions as a key purpose of Teaching as Inquiry. This, however, was absent from all those interviewed at school Y, suggesting school Y’s model of inquiry reflects a more process orientated model rather than deep and critical model. This metacognitive element of discussing the data was also found to be missing from most schools in a survey by the Education Review Office (2014). This finding is a critical point of difference between the two
schools in this study and for determining the purpose of the model. According to the original authors of the model, purpose has been described from a metacognitive standpoint in that teachers consider promoting “what strategies are most likely to work” (Sinnema & Aitken, 2011, p. 29). As Benade (2014) points out, the Teaching as Inquiry model has “no requirement they [teachers] examine their fundamental beliefs and assumptions” (p.10). From this perspective, it appears school X are using a model of inquiry different to Teaching as Inquiry.

Form of Teaching as Inquiry

Findings from this study reveal that each school espouses a form of Teaching as Inquiry in their procedural documents similar to that found in the New Zealand curriculum. However, each school in this study has modified the Teaching as Inquiry model according to their interpretation of what it should be used for. Both schools, for example, use the same style and wording from the Ministry’s model, but have added components that were perceived to add more rigour to the basic model. For example, both schools have added the component of collaboration in the form of peer observation, or collaborative discussion in professional discussion groups. These features create a model of inquiry that borrows elements from other forms of inquiry. Collaboration is an important concept in demarcating Teaching as Inquiry from other forms of inquiry. For example, Benade (2014) points out that collaboration is an absent feature of Teaching as Inquiry. This is evident in the wording found in both schools inquiry templates, such as ‘what is a valued outcome I want to work on? What new knowledge do I need?’ Collaboration is therefore not needed in the models espoused by each school, yet both schools utilise collaborative discussion. The importance of collaboration is highlighted by Timperley et al. (2007) as necessary to the process of inquiry.

Collaboration is important for increasing capacity (Harris, 2002) and was a widely valued activity among teachers and leaders in this study. Teachers at school Y found benefit in collaborative practice reflected in to the enthusiasm in which they spoke about the opportunity to share ideas when working towards common topics of inquiry. As well as the opportunity to share ideas, collaborative practices allowed individuals and the group to become more familiar with the inquiry process. Conducting inquiry in groups is endorsed by several authors (Darling-Hammond, 2000; Dempster & Macbeth, 2009; Earl & Timperley,
2009; Halbert, Kaser, & Koehn, 2011; Harris, 2002; Nelson & Slavit, 2008; Timperley et al. 2007) and is cited by the Education Review Office (2012) as a means of generating sustainability in programmes of inquiry. The researcher also felt that the teachers interviewed became frustrated when collaborative discussion became less focused on learning and more about other less important issues, such as behaviour of students in the classroom a topic to do with classroom management. School X also valued collaborative discussion reflected in their use of professional learning time being utilised for professional learning groups. These groups discussed student learning by making use of facilitators to help maintain the focus of the group. Collaborative practice is therefore viewed by teachers and leaders as beneficial and echoed in the research. However the addition of working together raises an issue identified by Benade (2014) in that Teaching as Inquiry model only specifies a small and limited amount of collaboration. By doing so, it, alters the focus of the model more towards that of one resembling action research. Altering the form of the model in this way shifts the whole focus of inquiry more towards other kinds of inquiry. The implication is that this movement away from the Teaching as Inquiry model could lead to a practice that is neither one form nor another and so the resulting model that is being used takes on a different meaning separate to that of Teaching as Inquiry or action research. It is possible that these actions could lead to the school losing sight of the purpose of the model they are using and leading to further confusion among teachers

Understanding the form of inquiry is important for leaders, as it determines the eventual purpose it fulfils and consequently its implementation. If leaders lift the Teaching as Inquiry model from the New Zealand Curriculum and implement it in their settings, it becomes no more than a “instrumental formula for teachers to follow with no requirement they examine their fundamental beliefs and assumptions” (Benade, 2014, p. 10). This viewpoint is reflected in some interviewees’ perceptions of the purpose of Teaching as Inquiry, in that it is no more than a means of finding a new strategy, or that it brings new strategies to the table for others to borrow. What appears to be happening instead is that Teaching as Inquiry is slowly changing in to what could be regarded as just another school system, bypassing the original intentions of the model, that of developing the attitudes of “open mindedness, fallibility and persistence” (Aitken & Sinnema, 2008, p. 53). This instrumental notion of Teaching as Inquiry is reinforced by two observations in this study. First of all structures,
timeframes, templates and checklists that both schools have provided to staff emphasise the procedural notion of inquiry, essentially reducing it to a process of problem solving. Secondly, the window of opportunity for inquiry is constricted by school charters, the practicing teacher criteria, student outcomes and the endorsement by line managers.

**The application of Teaching as Inquiry**

*Teaching as Inquiry and appraisal*

A concern was raised by an OECD report that found that school development needs to link closely with teacher appraisal (Nusche, Laveault, Macbeth, & Santiago, 2011). In this study, schools apply Teaching as Inquiry as a mechanism for meeting school, faculty and personal goals. Both schools use Teaching as Inquiry within their appraisal systems by permitting teachers to use evidence derived from its use for appraisal purposes. This concept has emerged from a shift towards “appraisal for learning” (Sinnema, 2005, p. 172) which “emphasises the need to ground appraisal processes in priorities for student learning, to inquire rigorously into the relationship between teaching and learning” (Sinnema & Aitken, 2011, p. 43). Both schools in this study use the appraisal system to focus teachers’ inquiries on priority areas where raised achievement is needed, a concept endorsed by the Education Review Office (2014). They describe how effective schools have balanced these two processes by drawing the requirements of appraisal out of wider school improvement mechanisms, including Teaching as Inquiry. However, they also report that the number of schools achieving this is few. In fact, only four percent of schools studied were found to have appraisal practices leading to improved teacher capability and improved student outcomes (Education Review Office, 2014). This study supports the above finding in that the researcher felt there was a lack of coherence between Teaching as Inquiry and appraisal. In this study, teachers expressed their desire to use time to work towards their own personal goals as a priority over other school activities, which were seen to be less important. Clearly, a key part of leadership is the balance of using Teaching as Inquiry in a form that is characteristically personal and grounded in teachers’ classrooms against its use in working towards more specified and centrally orientated ends. Contributing to this view, teachers pointed out that the appraisal process often lagged behind inquiry in that appraisal happened long after the event. Also, teachers often felt that they lacked ownership over their appraisal
goals. Instead, ownership was more evident in goals that were outside of the appraisal system, which the teachers had developed themselves. This study highlights the continuing struggle between achieving a balance between the developmental and accountability aspects of appraisal was reported by Middlewood and Cardno (2001). They also point out that dealing with each purpose separately is unlikely to solve the issue and that achieving both ends in one system, although logical, has several barriers; one of these is to ensure that the needs of the individual teacher are addressed as well as the school needs. Overall, although the use of Teaching as Inquiry as a fundamental part of appraisal may seem logical. Its practice is a complex activity.

Accountability versus professionalism

Leadership has a pivotal role in determining if appraisal is seen as having learning or compliant ends (Sinnema, 2005) and is dependent on how leaders position Teaching as Inquiry within the overall framework of the teachers’ role. Applying the Teaching as Inquiry model to appraisal raises several issues most notably that of the need for leaders to achieve accountability whilst at the same time attempting to develop a sense of professionalism. It seems that inquiry is espoused in both schools’ appraisal documents as underpinning appraisal, requiring teachers to be reflective, work collaboratively, apply initiative, be imaginative and confident and yet, immediately following this espousal, conditions are applied, such as in the following extract from one school’s appraisal manual, in relation to teachers selecting personal goals:

‘This is an individual goal and more personal to your own professional development, but it needs to be located within faculty or department target areas’.

Since appraisal is an outcome dominated activity. If student outcome data is used to highlight a topic of inquiry for teachers appraisal then this approach is only likely to ensure that teachers select inquiry topics that are known to improve outcomes such as teaching students to pass exams, a form of pedagogy the New Zealand Curriculum aimed to eradicate. Middlewood and Cardno (2001) confirm this as they point out that since schools are judged through measureable outcomes, then teachers’ practices are likely to orientate towards pedagogies that are most likely to achieve better outcomes.
Variation in the understanding of Teaching as Inquiry

Finally, this research shows that there is variation within school and between schools as to the degree of application of Teaching as Inquiry. For example, in this research, at both schools, senior leaders had put in place Teaching as Inquiry via appraisal procedures. At the level of middle leadership, some faculty leaders used Teaching as Inquiry as a fundamental part of practice and incorporated it into department systems of self-review, whereas other leaders viewed Teaching as Inquiry as an extra component of their job that they did not have time for. It is believed by the researcher that this variation stems from leaders’ different understandings of the Teaching as Inquiry model. Driver (2011) contends that understandings can be of a procedural or conceptual nature. The former requires “that schools may implement systems in order for staff to engage in an inquiry process to reflect and take action on practice” (p.121). If middle leaders have this level of understanding, then Teaching as Inquiry may be perceived as something extra to do on top of their busy workload.

Barriers and enabling factors of Teaching as Inquiry

The model of effective leadership

The senior leader interviewed at school X thought that leadership of Teaching as Inquiry is important to gain teachers’ commitment towards using the model and for them to see value in applying Teaching as Inquiry. By taking this approach, the senior leader aimed to help create a school culture similar to that described by the Ministry of Education (2008) in terms of how the school goes about solving problems. It is the desire of the senior leader that all teachers have the skills and responsibility to be able to effectively respond to student needs. This philosophy was thought of as a collective form of leadership concept inherent in all teachers’ behaviour, whereby they are all constantly responsible to apply Teaching as Inquiry. One middle leader took a view similar to the Education Review Office (2014), in that school culture takes several years to build, and described how the current level of understanding of Teaching as Inquiry and the value placed on it had indeed taken several years to achieve. Leadership was also highlighted as key to maintaining the school culture by focusing teachers towards goals that met school and faculty targets. Maintaining commitment and value towards Teaching as Inquiry was perceived by teachers and middle leaders as a function of how senior leaders positioned Teaching as Inquiry in relation to other
school activities. The Education Review Office (2014) called for cohesion across self-review processes school wide. At school X, leadership of inquiry had improved when leaders became united in its implementation. For example, it became important to one teacher that senior leaders all supported Teaching as Inquiry by working together, rather than working separately on individual projects. As a result, this demonstrated that Teaching as Inquiry was prioritised. Further down the school hierarchy, teachers demonstrated greater commitment towards Teaching as Inquiry when it was prioritised by middle leaders. For example, in departments where the teachers used Teaching as Inquiry in their everyday practice and saw its value, the Head of Faculty had promoted its use by devoting departmental time, created systems for its application and held discussions for its implementation. However, where teachers viewed it as less important to their role as a teacher, the Head of Faculty viewed it as an added extra that the department did not have time for.

Professional freedom versus greater management

All the teachers in this study recognised a tension between applying Teaching as Inquiry towards both school wide and personal goals. This tension was expressed as a difference in commitment between goals that are developed by the individual teacher and those that are related to wider school aims. Professionalism, commitment and enthusiasm were characteristics shown by teachers in relation to personal goals developed on their own terms. This commitment was demonstrated through teacher’s deep articulation of the personal goal in terms of its imperative, as well as the specific aspects of practice that needed to be changed. Where teachers had to work towards school wide and often pre-prescribed goals, the process was seen as arbitrary and just going through the motions. One teacher expressed how the lack of personal content skills prevented him from engaging with the goal, perceiving it to be beyond his capabilities. In summary, teachers were less able to describe the necessary pedagogical shift needed in meeting school wide goals, assigning greater importance to goals where they were involved in their inception. By doing this, they felt that they had control over the process and that they had the ability to achieve the goal.

Both schools in this study applied structures such as a time frames, milestone meetings and facilitated discussion. One school also used a system of supporting coaches to ensure that
Teaching as Inquiry was carried out as effectively as possible. A degree of structure was seen by all interviewees as necessary to help focus and commit teachers’ work towards inquiry practices. However, at the same time, teachers recognised that Teaching as Inquiry could not necessarily fit structural parameters. Interestingly, Fullan (2000) contends that too much structure and prescription can become a barrier to professional freedom and teacher agency. By adding structures such as a timeframe and checkpoints, managing the Teaching as Inquiry process suggests a predictable and logical sequenced activity. In fact, teachers recognised that Teaching as Inquiry was happening on a much smaller time scale, such as over a few weeks or even day to day, and often in relation to smaller pedagogical issues. In this regard, teachers’ views appeared to be more concurrent with that of the Education Review Office (2012), who suggest that Teaching as Inquiry is of most benefit to students when “feedback loops that are established when teachers observe, respond and evaluate in “real time” improve their teaching practices”. In this regard, Teaching as Inquiry is an unpredictable and dynamic activity, spanning over multiple time scales.

Balancing professional freedom and centralised management of Teaching as Inquiry is a difficult and complex activity. Alton-Lee (2011) and Nelson and Slavit (2008) state that overall school improvement can be achieved by relating individual classroom problems to overall school aims. However, teachers at one school repeatedly questioned the relevance of universal goals set for them by senior leadership; although seen as important, the goal given to teachers was not seen as a priority in the teachers’ setting. Furthermore, one teacher felt lacking in skills to be able to carry out that goal. In contrast, at the other school, greater commitment was described by teachers where Teaching as Inquiry goals were negotiated in relation to faculty goals. Faculty goals were in turn related to school goals. This approach developed goals that could be tailored at the individual level and still contribute towards overall school aims. The concept of working with teachers so that they can conceive how their work can contribute towards school goals was a key difference between schools. If Teaching as Inquiry is simply applied as a method for working towards individual, faculty or school goals, which have a pre-determined orientation and are applied in a rigid structure, then this approach by-passes the very essence of inquiry, that of being open minded and exploring new directions, as expressed by Benade (2014) and Sinnema, Sewell, and Milligan (2011). It is clear from this study that some teachers felt that the relationship
between their work and overall school improvement was lost. It is conceivable that this scenario could lead to conflict and a break down in relationships between teachers and leaders if partnerships are not created.

**Teaching as Inquiry as a form of reflective practice**

According to a model of effective leadership (Ministry of Education, 2008), leaders are required to provide opportunities for teachers to participate in context bound problem solving. According to Benade (2014), in order for teachers to change their practice, they must do two things; that is to realise the necessity for the change and, secondly, to be willing to change. This can only be achieved through a more critical and reflective practice than the Teaching as Inquiry model currently describes. A requirement for elevating Teaching as Inquiry towards a more critical and reflective practice is that “teachers explore their own assumptions and beliefs” (Benade, 2014, p. 10). Testing beliefs and assumptions is achieved by reflection that incorporates the concept of double loop learning (Senge et al., 2000). In one school, the researcher felt that leaders’ actions had gone some way to addressing the lack of learning focus in the Teaching as Inquiry model highlighted by Benade (2014). For example, several factors were evident in the conditions leaders created to support Teaching as Inquiry. In school X, active participation in regular scheduled meetings devoted to Teaching as Inquiry was recognised by teachers as a significant enabling factor for them to thoroughly reflect on teaching and learning. Sergiovanni (2001) and Timperley et al. (2007) also describe that conditions for learning are proportional to the opportunities leaders provide for learning to occur. Three out of five interviewees at school X said that they had experienced assumption testing. The fact that assumptions were being tested aligns with the attitudes that provide the foundation for inquiry to occur, namely “open-mindedness, fallibility and persistence” (Sinnema & Aitken, 2011, p. 32). Other activities that promote learning are classroom observation (Hong & Lawrence, 2011; Sinnema & Robinson, 2007), collaboration (Dempster & Macbeth, 2009; Kaser & Halbert, 2009; Nelson & Slavit, 2008) and learning that is problem based, practical, self-directed, uses prior knowledge and links theory and practice (Rudman, 1999: as cited in Piggot-Irvine, 2006). These were all processes being used at the research schools to certain extents. However, it appeared that all of them are needed for Teaching as Inquiry to be effective.
Use of time

This study revealed that decisions leaders made about the use of time is crucial to the level of adoption of Teaching as Inquiry school wide. Leaders can support inquiry practices through the provision of time (Halbert et al., 2011; Nelson & Slavit, 2008), findings echoed by Robinson et al. (2009) and Weinbaum et al. (2004) who found that student achievement was highest in schools where meeting time was given for discussing how to better meet the needs of students. However, a report by the Education Review Office (2014) suggests that whilst schools are investing time towards inquiry practices, inquiries are not contributing to innovations that lead to improved achievement.

Emerging from this study were two strategies for the provision of time. In one school, time was allocated within the timetable for teachers to discuss Teaching as Inquiry practices as part of a facilitated group. In the other school, such discussion occurred in departmental meetings outside of the timetable. The result of these two strategies was to either help promote Teaching as Inquiry as a central part of a teacher’s role, or to position it as an extra job component. In school X, where Teaching as Inquiry was afforded time within the curriculum, it was seen as a significant enabling factor. Teacher interviewees described the time consuming act of reflection necessitating extended time. In the school where there was an absence of time allocation, Teaching as Inquiry was forced to compete with other departmental items, such as assessment, moderation and curriculum, as well as other school initiatives. Consequently, the level at which Teaching as Inquiry was used was a function of how it was prioritised by the Head of Faculty. In one interview, the middle leader spoke of how Teaching as Inquiry was seldom used, whereas another used it regularly and provided departmental time for discussion.

The importance of student voice

This study revealed that student voice is viewed by teachers and leaders as a key component in making Teaching as Inquiry a more effective practice. Student voice took the form of students talking about the content and pedagogy they experienced. That information was then passed onto the teacher who used it to review teaching and learning programmes.
Student feedback is suggested by Timperley et al. (2007) that effective inquiry requires student feedback about the teaching and learning relationship. Other forms of evidence were used during the application of Teaching as Inquiry, but it was the actual verbatim used by students that provided the final stimulus for teachers to make changes to their practice. In addition, concurrent with findings of Alton-Lee (2011), when student feedback was initiated by teachers themselves, or it was directly related to the individual teacher’s practice, it led to greater ownership of the goal. This was a feature highlighted by both schools. Quality feedback is also pointed out by Dempster and Macbeth (2009) as being generated through an open learning environment. This was achieved in school Y through questionnaires and at school X was achieved through the videoing of students, discussing not only what was taught, but how it was taught.

Both schools used student achievement data to help focus teachers on relevant topics of inquiry. This approach does, however, unearth potential conflicts in that if student achievement data is prioritised as a starting point of inquiry, then it could have the impact of making Teaching as Inquiry an outcomes focused exercise and nullifies the essence of inquiry of discovering other potential legitimate areas of practice. It is argued by Middlewood and Cardno (2001) that educational priorities could differ between schools, especially those from different socio-economic backgrounds. If Teaching as Inquiry is assigned an outcomes focus then it is likely that the outcomes orientation of the model is likely to remain as teachers work through the model. This approach could potentially distil the process down to more of a procedure for getting students through assessment. This argument is strengthened by the fact that both schools also applied the use of student voice, which could potentially reveal any number of possible factors teachers could use for inquiry purposes. Furthermore, school X professionally develop staff to be creative and open minded in the form of student data for inquiry use, in alignment with several authors who call for innovation in the type of data educators use to inform inquiry practice (Aitken & Sinnema, 2008; Dempster & Macbeth, 2009; Halbert et al., 2011). New and innovative forms of data are only likely to add to the myriad of potential avenues of inquiry.

**Systems and structures**

The schools in this study have systems and structures that were placed around the Teaching
as Inquiry process. These ranged from interventions at each stage in one school to a more open format in the other school. The researcher felt that school X had gone some way to address concerns highlighted by Reid (2004), who cites the lack of examples internationally of embedded structures and systems in schools to support inquiry. First of all, at school X, a framework was provided for teachers to follow in the form of a booklet of systematic events to work through, which involves a step by step description of inquiry stages. According to Hong and Lawrence (2011), providing a systematic process will make inquiry practices more reliable. Subsequently, Robinson and Lai (2006) suggest that providing a framework for teachers to follow is important if a culture of inquiry is to be established. Secondly, teachers at school X are expected to apply Teaching as Inquiry in accordance with a timeline. Thirdly, teachers’ collaboration with colleagues in a professional learning community is facilitated and focuses on reflective discussion, so that student data is not simply acted on in isolation. This step aligns with the point made by Timperley et al. (2007) that data is often interpreted on a combination of historical experience of similar situations and teachers’ own world view.

Making Teaching as Inquiry a valid process is important to both teachers and leaders in this study. Both groups gave several examples of how validity is achieved in relation to their settings. First of all, validity came from thoroughly carrying out the process and making sure each stage is carefully planned. Middle leaders especially pointed out that validity is lost if stages are missed, or if data is missing or not thoroughly examined. Of most importance, however, is the need for in-depth conversations that test original assumptions. The Education Review Office (2012) endorse the use of open dialogue and Robinson and Lai (2006) suggest quality can be found in conversations that examine original beliefs. This was evident in the way middle leaders spoke about the need to thoroughly review the Teaching as Inquiry process for teachers. In turn, this led to greater teacher commitment to the process.

*The iterative nature of inquiry*

It was felt important in one school, by one senior leader and one teacher, that successful practice could be found in viewing Teaching as Inquiry as an iterative process. For example, it made sense to one teacher that smaller cycles of inquiry fit within a much larger cycle.
spanning two years or more; this allowed the teacher to achieve what was desired from the
inquiry and not to end the learning prematurely. The iterative nature of inquiry is highlighted
by (Timperley et al., 2007), who suggest repeated engagement with the learning process is
needed for it to achieve sufficient depth. This is backed by Coburn (2003). Furthermore,
depth of engagement is needed if in the school culture it is required (Nelson & Slavit, 2008).

Summary

This chapter discussed the findings in chapter four in relation to the literature base around
Teaching as Inquiry and inquiry practice in general. Discussion was carried out under three
headings: form, purpose and application of teaching as Inquiry; successful practice; and
implications for leadership. In summary, forms of Teaching as Inquiry differ between schools
and the model of Teaching as Inquiry they espouse may borrow elements from other forms
of inquiry. As to the purpose and application of Teaching as Inquiry, differences are evident
between and within schools as to how it is interpreted, in terms of what it should be used for
and how it is applied. For example, it could be individual or collaborative, depending on the
organisation and department. The third aspect of leadership appears to be critical in
determining how Teaching as Inquiry is perceived and prioritised school wide. I will now
make conclusions and recommendations based on the above discussion.

Conclusions

The stimulus for this research stemmed from my role as a school pedagogical coach,
assisting teachers and middle leaders to implement Teaching as Inquiry in their individual
contexts. As a result of those interactions, I felt that staff needed further clarification as to
the form of the process and what it could be applied to. Furthermore, I realised that leading
Teaching as Inquiry and combining it with appraisal is a process fraught with pitfalls, but also
potential new opportunities. I therefore developed the following questions to guide my
research:

Research question 1: In what forms and for what purpose do New Zealand Secondary
Schools use a ‘teaching as inquiry’ process model?
The research in this study shows that schools use a model of Teaching as Inquiry as described by the Ministry of Education (2007). However, differences occurred between schools’ understanding of the model in accord with findings by Driver (2011). This research shows that schools modify the model’s structure by adding components according to leaders’ interpretation of inquiry, such as critical reflection, collaboration, assessment for learning, critical friend practices and peer observation. Understanding the form of Teaching as Inquiry is significant in that it has direct implications for how it is used. For example, if Teaching as Inquiry is simply lifted from the New Zealand Curriculum, then it supports a surface level change process where assumptions and beliefs go untested. The addition of collaborative practice shifts the focus of the model into a form of action research. This point of difference has shown in this study to affect how Teaching as Inquiry is perceived by staff. For example, where the elements of assumption testing and collaboration are added to that model, these aspects challenge teachers’ existing practices and introduce new ideas. As a result, Teaching as Inquiry becomes perceived as a valued and worthwhile activity. When these are absent, Teaching as Inquiry loses its worth. Where school leaders in this study apply time parameters, templates, checklists and prompts for cycles of inquiry, they have been introduced to help leaders and managers to better manage Teaching as Inquiry. Equally, where leaders have viewed inquiry as a structure on which to hang evidence for evaluative purposes, it has only served to emphasise to teachers a process that must be followed rather than a metacognitive activity examining the actions of oneself. This is reinforced by teachers’ descriptions, whereby they could relate more towards Teaching as Inquiry when they applied it informally as a more fluid and unpredictable practice that occurred over a variety of time scales, from the day to day up to multiple years.

The purpose of Teaching as Inquiry is viewed differently between educators within the same school and between schools. This has occurred to the extent that only two interviews revealed the purpose as being close to that of the original purpose proposed by Sinnema and Aitken (2011). It is believed by the researcher that these differences in views appeared to stem from how senior leaders, middle leaders and teachers interpret the original purpose of Teaching as Inquiry. How senior leaders perceive Teaching as Inquiry is reflected in the systems, processes, interactions and structures senior leaders then create. On the one hand, it was referred to as a means of challenging teachers’ existing schema about educational issues and to develop teachers as autonomous, self-regulating practitioners. On the other hand, the purpose was described as a way of finding new strategies to better
meet student needs. Interpreting purpose was also clouded by the strong influence of appraisal, so much so, in fact, that Teaching as Inquiry is often viewed as a mechanism for meeting appraisal goals.

When the interviewee’s responses are compared to the original purpose of the model, there appears to be a risk; perhaps unbeknown to leaders, that understanding the purpose of the model is arguably more important than carrying out the model itself. The original purpose of the model is one of posing and comprehending problems so that future actions are grounded in an understanding of the present context. The original model clearly points out that through its use, future solutions are likely to occur less frequently than the preceding problems. This research can conclude that school leaders must understand the true purpose of Teaching as Inquiry in terms of its true purpose. By doing so leaders can understand the need to promote the models underpinning values and teacher dispositions inseparable from its implementation. This is also needed because the purpose of the model determines the form it takes and how it is positioned in relation to other school activities.

Research question 2: How is the ‘teaching as inquiry’ process model applied in New Zealand Secondary Schools?

Teachers in this study apply Teaching as Inquiry as a mechanism for working towards school, faculty and personal goals. These goals are used by appraisers to form the appraisal goals of teachers by linking the application of the Teaching as Inquiry model to areas of practice that will ultimately contribute to overall faculty and school improvement. By linking Teaching as Inquiry to appraisal, it is believed by leaders to be the most effective way for teachers to achieve their appraisal goals. This study, as well as other recent studies, has shown that this is a difficult and potentially impossible task. First of all, this study adds to the growing literature base showing that there is variation in the understanding of the Teaching as Inquiry model, not just between schools, but also within. It seems illogical and unjust that a weakly understood process be used as an underpinning of a key performance management process.
Secondly, a possible underlying cause of this variation is brought to light in other recent research and is supported by this study: the Teaching as Inquiry model as it stands in the New Zealand Curriculum has key components missing in its design, resulting in its an understanding by teachers and leaders which falls short of being able to elicit deep, critical reflection, leading to superficial changes in teacher behaviour at best. As a result, it is my contention that the Teaching as Inquiry model is insufficient as a mechanism of professional development for positively affecting classroom practice and insufficient also as a robust and thorough mechanism for satisfying the developmental focus of appraisal. It is a further contention that continued misinterpretation of the model could lead to it being another administrative and procedural task, rather than its original intention as a deep, reflective and critical form of practitioner research.

Thirdly, school leaders and appraisers at both schools in this study appear to have a ‘gatekeeper’ role over how teachers implement Teaching as Inquiry. For example, leaders in the research schools manage the appraisal process by applying structures such as a timeframe and milestone meetings which manage the implementation process. Appraisers monitor teachers’ implementation by working with teachers to help them form their appraisal goals. They also regularly check on teachers’ progress and have the final say as to whether the teacher has satisfactorily participated in Teaching as Inquiry. It is argued by this researcher that these structures and systems serve to narrow and restrict the concept of professional freedom, the notion of teachers being granted the opportunity to make decisions themselves in regard to their particular circumstances. For example, this study has shown that appraisal goals mandated to teachers are likely to be perceived as being less important to their everyday practice, resulting in inquiry practices which are likely to be superficial at best. Although appraisers collaborate with teachers to negotiate the nature of personal goals, it is ultimately the appraiser’s endorsement that permits personal inquiry. This approach ensured teachers are focusing inquiry on aspects of practice where they have had little involvement in its inception. This researcher believes that this way of managing Teaching as Inquiry works against the notion of developing teachers' inquiry capability at a metacognitive level, which was the original aim of the model. Although one school in this study has valiantly attempted to introduce elements such as assumption testing, Teaching as Inquiry is likely to remain undermined by the fact that it is situated in an outcomes and compliance landscape. And as warned by Driver (2011) several years ago: “if inquiry remains at a procedural understanding it could become a compliance tool within
performance management systems” (p.132). This has caused them both to shift closer to the point where they are in danger of being viewed as part of the same process and potentially becoming lost in the landscape of school administration.

In conclusion, using Teaching as Inquiry as a means to gather evidence for appraisal is fraught with pitfalls. Teacher commitment is more likely to be achieved when they are involved in developing topics of inquiry on their own terms; this reflects the unpredictable and dynamic nature of inquiry. This requires systems and processes which allow teachers the opportunities to deeply reflect on practice and challenge existing beliefs.

Research question 3: What are the factors that prevent and enable the implementation of a ‘teaching as inquiry’ process model in New Zealand Secondary Schools?

The researcher has drawn the following conclusion based on the extent to which the enabling factors in this study contribute towards an effective form of teaching as Inquiry; namely one that is reflective and promotes critical thinking and deep learning. In doing so, the researcher has highlighted four elements. Firstly, the most prominent factors were a shared understanding among all staff of what the purpose of Teaching as Inquiry is and what comprises a deep and critical reflective practice. Key to this is for leaders to have a thorough understanding of what aspect of school activity Teaching as Inquiry serves. Without this important first step, it is likely that the spread of its use throughout the organisation will lack a common understanding and be superficial in its implementation at best.

Secondly, in this study, where a common understanding between leaders and teachers did exist, middle and senior leaders spoke about how the school had developed capacity in terms of dispositions that teachers had acquired over recent years. In accordance with the literature, the most important of these is the ability to test teachers' underlying assumptions. The discussion of student data, such as student voice, was consistently recognised by leaders and teachers as a significant enabling factor in identifying a classroom need for the Teaching as Inquiry focus.
Thirdly, all interviewees recognised that reflection is a time consuming process. One school in this study addressed this through providing time allowance for reflective practice, which in turn brought commitment to the inquiry process. Furthermore, time was allocated within the timetable, reinforced by a school policy to ensure the time is used just for professional learning. Fourthly, greater teacher commitment was displayed when teachers were allowed the professional freedom to form their own goals. Where leaders intervened in the selecting of inquiry goals, a high level of prescription led to lower levels of commitment by the teacher.

This study showed that engaging with and using professional literature is still perceived as a difficult part of Teaching as Inquiry. For example, middle leaders and teachers in this study felt that large volumes of literature had to be engaged with, which turned them off that aspect of inquiry. Another barrier confirmed by this study is that systems ensure that inquiry processes are happening school wide; absence, or failure, of those systems is a contributing factor to the differential implementation of Teaching as Inquiry. This was highlighted in one school as the lack of opportunities for inquiry time, in that Teaching as Inquiry was put on the same agenda with other departmental obligations such as assessment and curriculum. In turn, this had led to its implementation becoming marginalised.

**Implications of the study**

This research echoes previous research that identifies that there is still some distance to go before Teaching as Inquiry is understood within schools in its original light. This misunderstanding has been fuelled by the model described in the New Zealand Curriculum. Its brief and process orientated presentation has perhaps contributed to a misinterpretation whereby it has been assigned as a structure to key school processes, such as appraisal and professional learning. It is the belief of the researcher that Teaching as Inquiry in its current form falls short in its intended purpose of meeting the objectives of appraisal and as a model of teacher self-improvement. This misinterpretation has bypassed the true essences of the Teaching as Inquiry model and, consequently, its position in schools has and continues to be misplaced. Furthermore, misinterpretation seems to be happening in a cascading fashion. Although leaders and teachers see the value in its intention, without a thorough
exploration of what valid and legitimate reflective practice looks like, current approaches are likely to continue to fail to contribute towards improving individual teacher and overall school performance.

In this study, one school has begun to address these concerns through outlining a form of professional inquiry that has added components congruent with a more deeply critical form of inquiry, such as the testing of assumptions, collaborative discussion supported through time allocation, and guiding documentation. This form of professional inquiry is also supported in school policy, ensuring that time is allocated within the school day for its implementation. These measures were not uniform across both schools, suggesting the problem is not confined to the research schools. Consequently, leaders in similar situations elsewhere will perhaps continue to valiantly struggle to win a battle they are destined to lose by trying establish and embed reflective practice using a form of inquiry unsuitable for the job.

**Research relevance**

This research is relevant to school Boards of Trustees, leaders and teachers. First of all, this research has shown how governance can support leaders by resourcing Teaching as Inquiry in the policy field. For example, this study has shown that when school policy allows for time provision to be given to reflective practice, this promotes greater use of Teaching as Inquiry in schools and ensures its sustainability.

Secondly, this research points towards leaders’ interpretation as key to how it is perceived further down in the school hierarchy. If leaders have an understanding of the nature of how Teaching as Inquiry can become more robust, then they may be able to address the limitations of the Teaching as Inquiry model in its current form. They will then be able to describe a more legitimate form of reflective inquiry that has the potential to positively influence teacher practice and contribute meaningfully towards overall school ends. A deeper understanding is also relevant to the relationship between Teaching as Inquiry and appraisal. If school leaders wish to relate these two activities, then leaders need to contend with and address the underlying attributes of each process. These are the use of Teaching
as Inquiry to develop attitudes and dispositions in teachers, balanced with an accountability framework of prescribed attributes in appraisal.

Finally, this research is relevant to teachers in that it is ultimately the development of their capabilities that positively influences teaching as learning practices. Greater understanding school wide of Teaching as Inquiry is likely to ensure that it takes on its intended form; that is, a form of effective pedagogy aimed at positively affecting student outcomes.

**Recommendations**

The above conclusions and implications of this study highlight the following recommendations:

1. School leaders need to clarify the original purpose of Teaching as Inquiry. Schools need to take a step back and revisit their collective understanding of the underlying principles of, first of all, the original form of Teaching as Inquiry and, secondly, the model of Teaching as Inquiry as it is understood within the school. This will in turn help leaders to understand and establish its role in the organisation. It will also avoid confusion downstream in the school hierarchy.

2. Schools need to clarify the form of Teaching as Inquiry in their own settings by defining and promoting key activities that enable the practice of Teaching as Inquiry in its original form. One of those key activities is that of testing the beliefs and assumptions of teachers. By doing this, teachers will be able to comprehend the true essence of Teaching as Inquiry and, as a result, will be able to know and practice it as they are required to do for it to become effective.

3. Ensure that systems and structures allow for teachers and leaders to have sufficient opportunity to carry out each stage effectively. When teachers carry out the process of Teaching as Inquiry effectively, commitment is generated and it is perceived as a valued activity. This leads to increase in teachers’ own capacity for self-regulation in terms of improving classroom practice. The increased prevalence of inquiry practices school wide can help schools generate a culture of inquiry. A culture of inquiry is
needed if Teaching as Inquiry is to become a process that is valued by the majority of staff.

4. In schools where Teaching as Inquiry and appraisal are linked, leaders need to review how and why they make the link between appraisal and Teaching as Inquiry in terms of how the link is perceived by teachers and how Teaching as Inquiry serves the developmental aspect of Teaching as Inquiry. A meaningful link between the accountability and development aspects needs to be established if Teaching as Inquiry is to become a valued part of the appraisal process. This can be achieved by leaders and teachers working together to highlight areas of development highlighted through the application of Teaching as Inquiry that are considered by both as worthwhile. This approach will ensure that teachers feel they are working towards meaningful and significant goals, achieved through teachers seeing the worth and social justice attached to those goals. When this is achieved, accountability will emerge in a more natural manner, rather than emerging from an imposed and mandatory set of parameters.

5. School boards need to support Teaching as Inquiry practice in the form of policy to resource its implementation. For example, by firstly ensuring time is set aside specifically for the development and the practice of Teaching as Inquiry. Secondly, that performance management policy be reviewed so that it better serves the supporting behaviours of Teaching as Inquiry, such as by stating the specific dispositions characteristic of effective Teaching as Inquiry that need to be developed. This will ensure leaders focus professional development on key enabling factors.

Recommendations for future research

This study provided findings that contribute towards the base of knowledge about Teaching as Inquiry in secondary schools and has highlighted that leaders need to carefully consider its purpose, the form it takes in individual schools and how it is implemented. These considerations have implications for Teaching as Inquiry as a) an effective form of reflective practice, and b) to contribute meaningfully to school and teacher self-review. Further and more widespread research is needed about the level of understanding of Teaching as Inquiry as a model of reflective practice. It would be interesting to see how widespread misunderstandings as to its purpose are. Research is also needed to establish greater links
between the ways schools with effective appraisal systems incorporate Teaching as Inquiry towards systems of accountability.
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Interview schedule for teachers, middle leaders and deputy principals

Name of interviewee: _________________________
Name of organisation: _________________________
Date: ___________________

1. Can you describe the teaching as inquiry model you use in your school?

2. Where was the model derived from?

3. For what purpose is the model used?

4. How often is the inquiry model carried out?

5. When are the characteristics of successful implementation of the teaching as inquiry cycle?

6. What systems do you have in place to ensure the teaching as inquiry process is being followed?

7. Once staff have carried out the cycle, what happens to the results of the inquiry?

8. What barriers exist when carrying out the teaching as inquiry model?

9. What factors enable you to carry out the teaching as inquiry model?

10. How well do you feel your model of inquiry meets the requirements of appraisal?
INFORMATION SHEET

The application of a 'Teaching as Inquiry' process in two New Zealand Secondary Schools

My name is Chris Wood. I am currently enrolled in the Master of Educational Leadership and Management course in the Department of Education at Unitec Institute of Technology and seek your help in meeting the requirements of research for a Thesis course which forms a substantial part of the course.

The aims of my project are:
- To identify the purpose and form of a ‘teaching as inquiry’ process model in New Zealand secondary schools.
- To identify teachers' and leaders' perceptions of successful practice in applying the ‘teaching as inquiry’ process model.
- To identify barriers and enablers when implementing a ‘teaching as inquiry’ process model.

I request your participation in the following way. I will be collecting data using an interview schedule that would last approximately 40 minutes for which I will be available for at a time of your convenience. If you agree to participate, you will be asked to sign a consent form. This does not stop you from changing your mind if you wish to withdraw from the project. However, because of our schedule, any withdrawals must be done within 2 weeks after we have interviewed you.

Neither you nor your organisation will be identified in the thesis as names will be replaced with codes and wording that infers your school identity will not be included. I will be recording your contribution and will provide a transcript (or summary of findings if appropriate) for you to check before data analysis is undertaken. I do hope that you will agree to take part and that you will find this participation of interest. If you have any queries about the project, you may contact my supervisor at Unitec Institute of Technology.

My supervisor is Professor Carol Cardno and may be contacted by email or phone.
Phone: (09) 815 4321 ext 8406 Email: ccardno@unitec.ac.nz
Yours sincerely

Chris Wood

UREC REGISTRATION NUMBER: 2015-1023. This study has been approved by the Unitec Research Ethics Committee from 20th May 2015 to 20th May 2016. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Participant Consent Form

DATE:

TO: [participant’s name]

FROM: Chris Wood

PROJECT TITLE: The application of a ‘Teaching as Inquiry’ process in two New Zealand Secondary Schools

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

I have been given and have understood an explanation of this research and I have had an opportunity to ask questions and have had them answered. I understand that neither my name nor the name of my organisation will be used in any public reports. I also understand that I will be provided with a transcript of the interview for checking before data analysis is started and that I may withdraw myself or any information that has been provided for this project up to the stage when analysis of data has been completed.

I understand that my discussion with the researcher will be taped and transcribed.

I understand that I can see the finished research document and that names of the school will not be given or implied.

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

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

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

Project Researcher: …………………………….. Date: ……………………………

UREC REGISTRATION NUMBER: 2015-1023

This study has been approved by the UNITEC Research Ethics Committee from 20th May 2015 to 20th May 2016. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.