An Investigation of the practice and Support of Teaching as Inquiry in a New Zealand secondary school

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A dissertation submitted in partial fulfilment of the requirements for the degree of Master of Educational Leadership and Management at Unitec Institute of Technology

2019
Declaration

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This Dissertation entitled ‘An Investigation of the practice and Support of Teaching as Inquiry in a New Zealand secondary school’ is submitted in partial fulfilment of the requirements of the Unitec Degree of Master of Educational Leadership and Management.

CANDIDATE’S DECLARATION

- I confirm that this Dissertation represents my own work.
- The contribution of supervisors and others in this work was consistent with the Unitec Regulations and Policies.
- Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set out for this project by the Unitec Research Ethics Committee. Research Ethics Committee Approval Number 2018-1062.

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ABSTRACT

Teaching as Inquiry (TAI) is being used in New Zealand secondary schools as a means for the professionally development of teachers and also as a process for teachers to work towards school’s annual goals. TAI is a challenge for senior leaders to implement in schools due to teacher workload, teacher and leader unfamiliarity with the inquiry process and the reluctance to use this practice for professional growth. This issue has become more problematic by linking TAI with the performance appraisal. This has shifted the original focus of TAI to addressing the professional development needs of teachers to using it as a tool for measuring teachers’ effectiveness. This study has investigated the practice and support of TAI in a New Zealand secondary school.

A qualitative approach was taken to this study and involved one method. Semi-structured interviews were carried out with teachers and senior leaders to investigate their perception of implementation and support provided for TAI. The key findings revealed one of the important aspects that is critical to carry out successful TAI is time. On one hand teachers and senior leadership identify that having regular weekly time provides an opportunity to systematically plan and implement TAI. On the other hand, given this time the expectations of senior leadership for teachers to carry out at least two or three inquiry cycles per year, resulted in inadequate time allocated as each cycle was rushed to ensure completion. This may or may not help teachers to achieve the desired Outcomes in terms of their professional learning, and sustaining the change in their practice. Another factor that has emerged in this study is the significant role of Professional Learning Group facilitator who manages and supports the teachers’ during the TAI cycle. The findings of this study have highlighted that the facilitators require formal training to successfully manage and lead the group so that the outcomes of TAI are effective. These findings indicate that during the TAI cycle, it is important that the senior leadership ensures effective use of time by all the members of the PLG towards professional learning, and arranges ongoing training and support for the PLG facilitators.
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<table>
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<tr>
<td>TAI</td>
<td>Teaching as Inquiry</td>
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<tr>
<td>PLG</td>
<td>Professional Learning Group</td>
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<tr>
<td>ERO</td>
<td>Education Review Office</td>
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<td>MYP</td>
<td>Mid Years Programme</td>
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<td>NZC</td>
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CHAPTER ONE
INTRODUCTION

Introduction

In my educational setting, I am a classroom teacher and the head of a faculty in a New Zealand secondary school. In addition to this role, I facilitate a ‘Teaching as Inquiry’ (TAI) group consisting of about ten to fifteen cross-curricular teaching staff. Each year the prime goal of ‘Teaching as Inquiry’ at my school is to assist the students who are at risk of underperforming. The staff are given choices on how they would like to address this using a TAI process by trying out new strategies that would assist staff in identifying learning needs of the students at risk, test their beliefs, gather evidence, analyse the data gathered, and reflect on a tried pedagogical approach.

TAI is a significant and contentious educational problem currently occurring in New Zealand secondary schools. The problem is expressed as a growing tension between secondary school leaders and teachers as they interpret and implement the TAI model. Misunderstandings and misinterpretations of guiding documentation have led to differences in how teachers and leaders perceive TAI, practice it for professional learning, support it, and the benefits for teaching and learning. The problem is justified as significant due to its topical nature and the urgent need for in its research to be continued on TAI. Subsequently, an outline of the research aims and questions are presented. Schools believe that TAI will improve teachers’ effectiveness, and this, in turn, will improve the academic achievement of students. In most schools, TAI is also linked with the appraisal process to ensure accountability among staff for their professional development and to fulfil the obligation of meeting professional standards set by the Educational Council to renew their practising certificate. In theory, this all appears very simple, but in reality, based upon my experience carrying out TAI and
working with the staff during the process at my current and previous schools. I have noticed that there is confusion in implementing TAI. The benefits of the TAI process are not communicated well among classroom teachers by school leaders in terms of being a most effective professional development tool that can improve student learning outcomes for the students at risk without the fear of being judged. The majority of the staff still consider TAI as a compliance tick sheet task that is essential for the appraisal process, and not as a vital professional development tool. Though TAI was introduced more than a decade ago in most New Zealand secondary schools, there are still gaps in implementing it effectively.

**Background**

In 2007 the revised New Zealand Curriculum document contained a reference to ‘Teaching as Inquiry’ (Ministry of Education, 2007). TAI has become widely used by teachers as a professional development process (Ministry of Education, 2017). In the TAI process, participant teachers identify students’ learning needs, test their beliefs, analyse the evidence gathered by inquiring about building an effective pedagogical approach, and establishing a significant connection with the professional standards (Sinnema & Aitken, 2011). My extensive experience in the secondary school sector has been as a teacher and as a curriculum leader. I have observed that schools are adopting the TAI process on site while investing in weekly professional learning time. However, the concern is that the practice is neither well guided by school leaders nor well utilised by all participant teaching staff, and this is why I have an interest in studying this topic. My purpose is to focus on this issue to identify factors and to explore how they can be addressed to improve the TAI practice.

Schools utilise TAI without understanding the motive behind this process (Benade, 2015; Sinnema & Aitken, 2011) and the entire process of carrying out TAI is not well
supported (ERO, 2012). Benade (2015) suggests that there is a large gap in all schools between the ways TAI is documented in the school’s policy documents and the way it is applied in practice. He further adds that TAI is a challenge for senior leaders to implement in a school due to teacher workload, teacher and leader unfamiliarity with the inquiry process and the reluctance to use this practice for professional growth. This issue has become more problematic by linking TAI with performance appraisal, as this shifted the original focus of TAI to address the professional development needs of teachers to use it more as a tool for measuring teachers’ effectiveness.

Rationale

The Education Review Office (ERO) (2012) has also identified that support in schools for TAI has weakened in some schools between 2009 and 2011. It might be because it was assumed that teachers would manage their TAI, but in my experience as a middle leader, I have noticed that some teachers are not able to utilise TAI effectively while carrying out their day to day teaching. There could be various reasons for this problem like the philosophy of TAI not being communicated or understood, workload concerning the time pressure, struggle to be a competent reflective practitioner, readiness to learn and change, biased in analysing data, and lastly the fear of appraisal. As many schools are now linking TAI with the appraisal process (Benade, 2015; Hill, 2016; Sinnema & Aitken, 2011), this makes teachers use TAI as a compliance process to prove rather than improve. Therefore, this research could identify the gaps during the implementation of TAI in a New Zealand secondary school. This study could also identify factors that may be beneficial to other secondary schools for the effective implementation of TAI. Most schools are putting a lot of time and effort into TAI by creating weekly Professional Learning Groups (PLG). Therefore, it is necessary to examine if this is a productive exercise not only in improving professional practice, “TAI has, at its core, the purpose of redressing inequity while simultaneously enhancing the quality of teaching and learning”(Conner, 2013).
Research Aims and Questions

As a result of the problem stated above, I am therefore interested in finding out how TAI is carried out and to investigate the staff perception of what is considered as a successful TAI process in a secondary school. I would also like to find out staff perceptions of the support provided to carryout TAI. I would therefore also like to find out what are the factors that lead to the successful implementation of TAI in a secondary school.

The Research Aims to guide this research were:

1. To examine the practice of ‘Teaching as Inquiry’ in one New Zealand secondary school
2. To find out senior leaders’ perceptions of how support is provided to carry out ‘Teaching as Inquiry’
3. To find out teachers’ perceptions of how support is provided to carry out ‘Teaching as Inquiry’
4. To investigate the school leaders’ and teachers perceptions for the successful implementation of ‘Teaching as Inquiry’

The Research Questions to guide this research were:

1. What are the practices of ‘Teaching as Inquiry’ in one secondary school?
2. What are the leaders’ perceptions of how support is provided to carry out ‘Teaching as Inquiry’?
3. What are the teachers’ perceptions of how support is provided to carry out ‘Teaching as Inquiry’?
4. What are the school leaders’ and teaching staff perceptions for the successful implementation of ‘Teaching as Inquiry’?

**Dissertation outline**

This dissertation is divided into the following five chapters.

*Chapter One* introduces the study and presents TAI as a significant and contentious educational problem currently occurring in New Zealand secondary schools. The problem is expressed as a growing tension between secondary school leaders and teachers as they interpret and implement TAI. Subsequently, an outline of the research aims and questions are presented.

*Chapter Two* presents the literature base relevant to this study. The literature review is carried out under three main themes: Teaching as Inquiry, Professional Development and Leadership Support, and Reflective Practice and Leadership Support.

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

*Chapter Four* presents the findings from the interview data and analysis of the findings. Throughout this chapter, the summary of key findings are analysed and presented using the ten research questions as headings.

*Chapter Five* discusses the key findings with support from the literature reviewed in chapter two. The chapter also includes conclusions from the research and provides valuable recommendations for school leaders as a direct result of this research. Finally, the study ends by highlighting the limitations of this study and suggesting areas for future research.
CHAPTER TWO
LITERATURE REVIEW

Introduction

This literature review is arranged into three sections according to the themes identified in the literature. In section one, I have discussed the concept of ‘Teaching as Inquiry’ about classroom practice and why it is promoted in schools as a component of effective pedagogy. I have further described that TAI is a vital tool for the teachers’ professional development, reflective practice, and current challenges associated with TAI. In section two, I have reviewed the impact of TAI in the form of professional development of teachers’ learning and transforming their knowledge into practice for the benefit of their students’ progress. I have highlighted the role of school leadership in providing high-quality professional development. In section three, I have discussed the various ways in which reflective practice is carried out during the TAI process, as discussed in the literature. In each section I have included the significance of the school leadership support given to the staff while carrying out TAI as this assists with ongoing staff professional development and in turn, initiates changes to classroom practice that can contribute towards the overall school development.

Teaching as Inquiry

The New Zealand Curriculum (NZC) guides educators to embrace effective pedagogy around teaching and learning by using the TAI model regularly in teaching practice (Ministry of Education, 2007). TAI in the NZC originated from the Social Sciences Tikanga-a-iwi Best Evidence Synthesis (Aitken & Sinnema, 2008). The Ministry of Education publication, the Education Gazette (2016), refers to:
Teaching as Inquiry as a process is all about being willing to take risks, to be wrong, to fail in your endeavours and then change direction and start again. It is about reflecting on what you do and then changing your practice – sometimes in a small way, sometimes much bigger. (p.10)

TAI as recommended by Aitken and Sinnema (2008) should involve an inquiry in three stages; focusing inquiry, teaching inquiry and learning inquiry. For the first stage, focusing inquiry involves identifying what matters the most for the teachers and students based on curriculum needs, community expectations and above all, the learning needs, interests and prior experience of the learners. At the second stage of teaching inquiry it is necessary to establish an understanding between research evidence and teaching strategies that are likely to enhance learning in the classroom. The final stage of learning inquiry is to analyse the impact of teaching actions on students’ outcomes and to establish the link between the teacher action and student outcomes. Inquiry stages involve reflective practice as stated by Earl and Ussher (2016), “Inquiry as professional development and inquiry as research, on the other hand, are forms of reflective practice designed and intended to go beyond the personal” (p. 47). MacBeath and Dempster (2009) claim that utilising the TAI in teaching practice supports teachers to construct their professional growth around the art and science of teaching (as cited in Fowler, 2012). Timperley, Wilson, Barrar, and Fung (2008) also support this by suggesting that continued improvement in teaching depends on teachers growing their individual inquiry skills. TAI is shifting the term professional development to professional learning, where the former requires participation and the later necessitates teachers to be totally engaged in their learning with students at the centre of their professional learning (Timperley, 2011). Timperley further suggests that knowledge gained through TAI during classroom practice has a more practical implication and can be useful to solve classroom challenges in the future. TAI supports and assists by providing organised opportunities to reflect on assessment evidence and to check the effectiveness of a specific teaching strategy. The TAI model provides a platform for carrying out reflective practice in a more structured way and also allows teachers to address culturally responsive pedagogy to improve outcomes for their Maori and Pasifika students (Ministry of Education, 2010). Reflective practice as explained by Benade (2015), is when a practitioner consistently
uses a reflective process either individually or with colleagues to analyse several features of a teacher’s actions or strategies, from the present into the future. In collaborative reflective practice, trust and collegiality is essential (Finlay, 2008). Research carried out by Benade (2015), identifies that a professional who does not engage in reflective practice faces behavioural issues, loses interest and feels disconnected with the students. The literature suggests that TAI is synonymous with inquiry learning, so this makes the term TAI confusing for professionals because the two terms are at times used in very similar situations (Sinnema & Aitken, 2011; Benade, 2015; ERO, 2012).

Another issue identified in the literature is that the original TAI model recognised that it was necessary to try new approaches. However, in the NZC the proposed TAI model, does not include adequate guidelines for implementation (Sinnema & Aitken, 2011). Several authors (Sinnema & Aitken, 2011; Benade, 2015; ERO, 2012) suggests that TAI is a cyclic model, with limited focus, and not enough room for reflective practice. At the school level initially, when the TAI model was introduced there was minimal use of research to support the individual inquiry findings, which challenged some professionals to reflect on their practice (Babione, 2015). Cardno, Bassett and Wood (2017) recommend that vigorous TAI needs not just the quality time but also quality support. It is vital for school leaders to provide a quality instructional environment as this will influence the professional development through TAI (Elmore, 2008). Fowler (2012) suggests that teachers who carry out a robust inquiry that benefits the students, view inquiry as a key professional development and share their inquiry with other teachers. Fowler (2012) further suggests a strong involvement of the senior leadership and also effective ways to analyse data, which assists in directing school-wide professional development.
Professional development and leadership support

Professional development is about teachers’ learning, learning how to learn, and transforming their knowledge into practice for the benefit of their students’ progress. Professional development can be defined as “the development of competence or expertise in one’s profession”, or “the process of acquiring the skills needed to improve performance” as a teacher (Oxford English Dictionary Online, 2008 as cited in Timperley et al., 2008). Teacher professional development requires cognitive and emotional participation of teachers individually and collaboratively to examine where one stands in terms of principles, assumptions, and beliefs, and be ready to embrace appropriate alternatives for improvement or change (Avalos, 2011). Avalos notes that professional development is driven by educational policies, school culture, and needs of teachers and their students. Timperley et al. (2008) recommend that professional development is, “an intentional, ongoing and systematic process” with the term having “taken on connotations of delivery of information to teachers to influence practices” (p. 3). Teachers feel negatively about professional development after attending professional development programmes as most of these programmes are short-term professional development sessions which are chosen by others, presented by outside experts, and use direct instruction (Kwakman, 2003; Schlager & Fusco, 2003; Sandholtz, 2002). The short professional development courses often lead to experiences which are uninteresting and irrelevant, with participants usually forgetting the content covered (Lee, 2005; Allen, Osthoff, White, & Swanson, 2005). Such programmes do not focus on the key areas and values of adult learning, assuming teachers are passive recipients and ignore the fact that teachers have a wealth of knowledge themselves (Lee, 2000; Sandholtz, 2002).

The literature reviewed showed that professional development programmes are categorised based upon their distinct features. For example, Sher and O’Reilly (2009) have identified programmes as either related to subject matter or to pedagogy, while Kennedy (2016) identified four groups: generic teaching practices, subject-specific teaching practices, curriculum and pedagogy, and how students learn. Other authors
like Blank and de las Alas and Smith (2009) focus more on the design of professional development programmes, professional development with follow-up steps in schools with active learning and a collaborative approach. Teachers believe professional development can benefit them to become more effective teachers and to help their students (Luft & Hewson, 2014). However, not all professional development results in teacher improvement, and very few associate it with student achievement (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Over the past ten years in New Zealand, there has been a paradigm shift gathering momentum about the professional development of teachers. Whitworth and Chiu (2015) have identified the role of school leadership in providing high-quality professional development under the right conditions that will assist teachers to be more effective and in turn, improve student achievement (Yoon et al., 2007). Whitworth and Chiu (2015) also suggest other features that influence change with professional development; teacher motivation, school culture, working conditions, and the role of school leaders in supporting teacher change in principle and in practice.

Darling Hammond and McLaughlin (1995) have a vision that the effective professional development approaches involve teachers as both learners and teachers. The TAI concept requires teachers to rethink their classroom practice that would help them to hypothesise new roles and expectations about student outcomes, to reconsider practice that necessitates professional development for both teaching and learning, and to create new visions of what, when, and how teachers should learn. In the new professional development models that influence the sustained changes in the classroom, the teacher occupies the central position as this involves the teacher being engaged in critically examining their practice using TAI (Butler & Schnellert, 2012). Likewise, Hopkins (2000), Morrell (2004), Robertson (2000), and Schnellert (2011) have identified collaboration around professional practice and learning as a significant step during the TAI process. While, Hopkins (2000) suggests that collaboration establishes networking, breaks down isolation, helps to works towards joint solutions and exchanges practice, knowledge and expertise. Whereas, Van Horn (2006) advises that with collaborative practice, teachers are more likely to take risks,
persevere with change, develop, and apply strategies to support students. The shifts in practice are most likely to occur when right structures, resources including analysed assessment data is available, to set goals and monitor outcomes (Butler & Schnellert, 2012). These can result in a meaningful collaboration that inspires co-regulated commitment leading to a shift in the practice and the generation of a link between research and practice (Butler & Schnellert, 2008; Hargreaves, 1999; McIntyre, 2005). Another important phase that assist teachers to construct knowledge about teaching and learning is by reflecting on their classroom practice (Cochran-Smith & Lytle, 2004 and Dana & Yendol-Hoppey, 2008).

The collaborative model of professional development eventually involves a vital change in the school structures as it has traditionally existed (Webster-Wright; 2009). The most important part of this is to emphasise learning rather than development (Ramsden; 2003). The literature review carried out by Opfer and Pedder (2011) recommends that teachers face challenges while adopting new practices because of an unsupportive environment and uncoordinated leadership. To establish strong organisational support, Pedder (2006) suggests, “schools need to develop the processes and practices of learning organisations if they are to embody the conditions that optimize and sustain teacher learning” (p. 175). Schools that are learning organisations have a balance between external professional development opportunities and utilising the internal resources, and capacity within the school. (Hallinger & Heck, 2002). Maintaining the balance between seeking external knowledge and internal resources creates a culture of continuous learning for teachers in a school as opposed to the schools that regularly implements new strategies from external knowledge without any significant impact (Opfer and Pedder, 2011). Pedder and MacBeath (2008) highlight that it is a real challenge for schools to run internal professional learning opportunities to maintain sharing of knowledge and the use of this knowledge to improve mutual and individual practices. Many authors note that effective professional development can contribute to improved student achievement (Buczynski & Hansen, 2010; Desimone, 2009; Wallace, 2009; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). The research carried out by Lee, Deaktor, Enders, & Lambert (2008) suggests that effective professional development narrows the achievement gap. While Whitworth and Chiu (2015) state that factors like teacher
motivation, school culture, and working conditions impact on professional development (Whitworth, & Chiu, 2015). However, the most critical factor in creating teacher change is the role of the school leadership through professional development and other administrative practices, leaders play an important role in the planning and execution of professional development, as well as providing ongoing leadership to support change, and to support teachers’ instructional practices for successful student learning outcomes (Banilower, Heck, & Weiss, 2007). Another key aspect that helps teachers to become lifelong active learners is giving them regular opportunities to reflect upon practice (Roth, Garnier, Chen, Lemmens, Schwille & Wickler, 2011).

Reflective practice and leadership support

The teaching profession is becoming more and more complex as there is an increase in students with diverse backgrounds and different learning and social needs. This is endorsed by Larrivee (2000) who notes that to be effective in this profession, it is essential to meet the emotional needs of the students and to enable this, power must be shared with the learners by switching from the teacher role to a social mediator, a learning facilitator, and a reflective practitioner. John Dewey (1933) was a pioneer in the field of reflective teaching practice, and he defined reflection as learning from experience. Reflective practice is a tool that is a significant part of teacher education, hence it is an important aspect of professional development programmes (Gun, 2010). While Shandomo (2010) suggests, “reflection is a process of self-examination and self-evaluation in which effective educators regularly engage to improve their professional practices” (p.103). Whereas Lee (2007) recommends that reflective practice is a challenge as it needs critical thinking, solving problems in a self-directed path using personal learning and self-awareness. Critical reflection allows teachers to examine their judgements, interpretations, assumptions, and expectations (Larrivee, 2000). Reagan, Case & Brubacher (2000) suggest when a teacher carries out reflection and analyses the findings, it assists to formulate new strategies for changing classroom behaviour. While Brookfield (2004) links the use of reflective practice with professional growth and argues when reflection is not part of the teaching practice,
teachers assume that their students are following their instructions and teaching. Shandomo (2010), confirms the need to train teachers to practise critical reflection, by analysing classroom actions and conditions leading to those actions. Shandomo further emphasises that reflections are critical when carried out regularly through classroom observation, evaluation and looking at not just what happens in the classroom. TAI needs to be understood as a form of reflective practice, the main difference being that TAI is formalised, and usually focussed on a specific issue whereas reflective practice involves activities like as writing, discussing and thinking and thus considered as informal and on-going (Benade, 2015).

According to Finlay (2008), reflective practitioner critically examines their actions to improve future practice, which is considered part of the course for life-long learning and can change teaching practice, provided, it is carried out effectively. The traditional professional development approach focuses on bringing change through acquiring new information, whereas reflective practice interprets professional growth as more complex that involves change in deeply held action principles, where learning theory is constructed by testing a practitioner’s assumptions (Osterman & Kottkamp, 2015). These two authors highlight the advantages of reflective practice, as a professional development opportunity in a classroom setting, connecting with educational practices, providing an opportunity for ongoing collective dialogue among professionals in an organisation working towards common institutional goals. The reflective process is cyclic not linear, and the reflective practitioner goes through three phases during reflective practice. The first phase is an examining phase around current practice which generates questions and a desire to change, the second phase is struggle, as fear is associated with this stage and therefore this phase becomes the most challenging phase for the practitioner, where chances are that one might surrender and revert back to original ways, and the last phase brings the perpetual shift leading to personal discovery that transforms the practice (Larrivee, 2000). While Benade (2015), comments that to make the process of inquiry collaborative it is necessary that assumptions and beliefs be shared with others to work towards common goals for a reflective professional inquiry. Benade(2015) recommends further that “a name such as ‘teachers as inquirers’ is preferable shorthand for the active,
collaborative effort of a community of professionals whose members seek to better understand themselves in order to better understand the work they do” (p. 118).

Gutierrez (2015) categorised three types of reflective practices; descriptive, analytical, and critical. In descriptive reflective practice, classroom events are seen as random experiences and are not based on theory or not related to prior experience. In analytical reflective practice, the teacher analyses how teaching pedagogy affects students’ learning and thus identifies possible strategies to improve instructional practice to support students’ learning. Whereas, critical reflection is when a teacher tries to understand the philosophical and ethical aspects of teaching while regularly examining their teaching pedagogy and relates this to the diverse learning styles of students. Reflective practice can be a very significant professional development tool, but sometimes there are some ethical issues associated with this. According to Finlay (2008) the ineffective use of a reflective model may do more harm on professional practice than promoting professional growth. Some practitioners might become far too self-critical, and will require a mentor to ensure they model the process and support staff during the reflective process. Any TAI method requires trust among teachers and leaders (Timperley, et.al., 2009), as it supports teachers to discuss their professional learning needs to improve their teaching so that teachers feel safe to make mistakes and to learn from them. Timperley et. al. (2009) further adds that in a culture of limited trust, it is improbable that the process of TAI would be successful.

School leaders need to promote ongoing reflective practice as this is an essential characteristic of teachers' professional learning (Lyngsnes, 2012). Research carried out by Msila (2013) suggests that when leaders create an environment of critical reflection for teachers it helps to improve learner performance as well as teacher commitment. Msila’s findings suggest further that critical reflective practice helps a teacher to avoid “pedagogical blind spots” (p. 87) and a leader should be able to inspire learning from day to day experience. Generally, this reflection does not happen on its own; it is the school leaders who builds the culture to make sure that teachers are able to involve in critical reflection by providing time, training, and actively engaging in dialogue with teachers around classroom practice (Msil, 2013). Lebak and Tinsley
(2010) examined collaborative reflective practice following an action research project that showed a shift in pedagogical practice from a teacher centered textbook driven approach to a student centered inquiry based approach” (p. 953).

Summary

In summary, the literature reviewed identifies and shows the links between the three key themes related to leadership support for ‘Teaching as Inquiry’. These themes are; ‘Teaching as Inquiry’, Professional Development and Leadership Support, and Reflective Practice and Leadership Support. A great deal of literature clearly explains the purpose of TAI and its place in the New Zealand curriculum. Since the inclusion of TAI in New Zealand schools, there has been a shift in professional development and in its current form, it is visualised more as professional learning. The literature review also suggests that TAI in a school not only requires quality time but for successful implementation, requires quality support from the school leadership. With the introduction of TAI, there has been a shift to an ongoing internal professional learning rather than just relying on external professional development programmes. This literature review highlights that it is a real challenge for schools to run internal professional learning opportunities, to continue sharing knowledge and to use this knowledge to improve shared and individual practices. The last theme that needs to be an integral component of TAI, is reflective practice. There is plenty of literature that defines reflective practices, identifies the benefits of reflective practice, the phases of reflective practice, and different types of reflective practices. However, this review of literature identifies some gaps in research on the merging of TAI effectively with professional learning and with reflective practice.

The following Chapter Three, Methodology, outlines the rationale for the interpretive epistemology and qualitative methodology adopted for the selected method of semi-structured interviews with two senior leaders and three teachers in a New Zealand secondary school.
CHAPTER THREE
METHODOLOGY

Introduction

This chapter provides an overview of the research design in this study by discussing the reasoning for using an interpretive epistemological position to understand the school leadership support for teaching staff carrying out TAI in a New Zealand secondary school. Consequently, it discusses the qualitative methodological approach that the researcher has undertaken for data collection and analysis. The selected method, the semi-structured interview is outlined. Finally, the concepts of validity and ethics are discussed in relation to this study.

Methodology (Overview)

Research is defined as a process for collecting and analysing data to grow an understanding of a subject (Creswell 2008). Abend (2008) has given various meanings for the term theory as, “an explanation of a particular social phenomenon, an overall perspective from which one sees and interprets the world” or “a theory that establishes a relationship between two or more variables” (pp. 177-178). According to Bryman (2012), the relationship between theory and research is an ongoing discourse with two main interpretations: a deductive approach when theory is believed to guide research and an inductive approach when theory is a result of research. Once a research topic is decided, one must consider the approach which depends on how one thinks about the problem and how it can be studied, to achieve credible outcomes. A researcher’s own views also influences this process, the beliefs and assumptions about true knowledge, which guide how they view the world around them and this is referred to as a paradigm (Schwandt, 2001). The key philosophical measures to decide research paradigms are ontology, epistemology and axiology (Wahyuni, 2012). In ontology, the social world is perceived as something that is external (Bryman, 2012) and
independent to social actors (Wahyuni, 2012). Morrison (2007) defines epistemology as the ways researchers obtain knowledge by asking how to find it, how to recognise and use it, and also distinguishing true knowledge from pseudo-knowledge. Cohen, Manion, and Morrison (2011) describe epistemological knowledge as “nature and forms, how it can be acquired, and how to communicate to other human beings” (p. 7). Epistemology also shows the relationship between the research participant and the researcher (Ponterotto, 2005). Axiology is about ethics and values to be considered in research (Patton, 2002).

Mertens (2005) suggested, that the "exact nature of research is influenced by the researcher's theoretical framework" (p. 2). This theoretical framework used in research is also referred to as the paradigm (Mertens, 2005; Bogdan & Biklen, 1998) or approach by (Ponterotto, 2005). A chosen paradigm or approach impacts the way data is studied and understood, leads the researcher towards philosophical research assumptions and in deciding correct tools, participants and methods (Denzin and Lincoln, 2000). Research paradigms can be categorised through their ontology, epistemology, and methodology (Guba 1990). Common paradigms discussed in research literature are positivism, postpositivism, constructionism/constructivism, interpretivism, transformativism, pragmatism, deconstructivism and postcolonial (Bryman, 2012; Chilisa, 2011; Guba & Lincoln, 2005; Saunders, Lewis & Thornhill, 2009 and Wahyuni, 2012). Positivism advocates the application of natural science methods to study social science (Bryman, 2012). Positivists accept the universal generalisation and apply it to all settings, which is now referred to as naive realism (Wahyuni, 2012). Positivism is a form of realism similar to a deductive system, using a quantitative methodology (Guba & Lincoln, 2005). Postpositivists challenge the belief of the absolute truth, mainly learning about human behaviour in social sciences (Cohen et al. 2011). Postpositivism identifies that observation can have error and that all theory is revisable (Wahyuni, 2012). An Interpretive paradigm emerges from a postpositivist stance and involves the researcher interpreting the features developing from social constructions in the form of interaction with participants, awareness, and with shared meanings (Myers, 2008). Interpretivist researchers trust that reality is
observable only by using diverse approaches like social constructionism, idealistic, hermeneutics and phenomenology (Collins, 2017). Interpretivism values subjectivity and avoids doing objective research on human behaviour (Willis, 2007). Interpretive researchers see the world and the researcher as entangled with collecting data, the data that has been accessed through “framing research questions and those actions in a research setting that act on that framing” (p. 79). In an interpretive approach, data have no prior existence outside a specific research setting (Schwartz-Shea & Yanow, 2013)

**Epistemological position**

This research adopts an interpretivist paradigm as this research aims to understand the support provided during TAI and how the participating staff perceives TAI as a means of professional growth to improve their learning. TAI is a social process and therefore the research findings are going to be subjective and socially constructed because the data gathered will be derived from participants’ feelings, experiences and reflective input in terms of impact in classroom practice and professional growth (Kawulich & Chilisa, 2012). The knowledge build is realistic, diverse based upon individual participant’s values, context-dependent and some parts of it might be universal (Lee, 2012). I aim to interpret the findings with an idiographic approach which according to Neuman (2011) provides highly detailed explanations of this social reality of TAI in a high school setting. Interpretivism is an approach that involves multiple questioning to clarify actual realities (Ponterotto, 2005) by using a semi-structured interview process. Ponterotto (2005) further adds that to uncover the meaning it is necessary to involve the participants’ deep reflections by interaction with the researcher. Interpretivist research depends upon the "participants' views of the situation being studied" (Creswell, 2003, p. 8) and recognises the impact of their background and experiences. An Interpretive study of social phenomena considers the social world that people live in (Bryman, 2012). According to Henning (2004), the interpretive paradigm has an emphasis on experience and the interpretation of
meaning based on the participants' understanding of given situations. This aligns with my research focus that seeks to interpret staff feelings, experiences and reflections on TAI and appraisal. An interpretive methodology will therefore allow me to establish and interpret the participants’ understanding of the research topic.

Rationale for A Qualitative Approach

Methodology is a research plan that clarifies ontological and epistemological principles into plans that show how a study is to be conducted (Sarantakos, 2005). This research will adopt a qualitative methodology. Qualitative research consists of aims which help to understand social situations, and methods used in qualitative research, and generates words instead of numbers, for data analysis (Bricki & Green, 2007). Relating to my research aims and questions, I am interested in investigating the perspectives of the participating staff around TAI practice, the support provided during TAI, and effective TAI. While carrying out this research, I want to understand the experience of participating staff as they carry out TAI not only to improve teaching and learning but also to grow professionally. This is supported by Merriam (2009) who notes, “qualitative researchers are interested in understanding the meaning people have constructed, that is, how people make sense of their world and the experiences they have in the world” (p. 13).

As advocated by Willis (2007), qualitative approaches often provide rich information that are essential for interpretivists to completely understand a specific setting. The qualitative research methodology naturally rejects positivism and embraces a postpositivist interpretive stance (Parkinson & Drislane, 2011). As my research questions are around TAI which is carried out in a school setting, this research also needs to be carried out in its natural setting to construct a theory through symbolic interactions with participants. Denzin and Lincoln (2005) comment that “qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret phenomena regarding the meanings people bring to them” (p. 3). A final reason for selecting this methodology is because qualitative data is in-depth, gathered
by empathetically analysing the research setting (Punch, 2009). As for my research, I require in-depth data that gives the different perspectives of senior leaders and teachers.

Research Method

Semi-structured interview

The method I have adopted for gathering qualitative data is semi-structured interviews. According to Teijlingen and Forrest (2004), a semi-structured interview is described as “a guided conversation with a purpose” (p.171). In this type of conversation a general set of questions are used with all participants, but the interviewer can vary the questions according to the circumstances (Lichtman, 2013). An interview is considered a method of collecting data from a primary source (Wellington, 2015). Mojtahed, Nunes, Martins, and Peng, 2014, note that “An interview is a technique used by qualitative researchers to elicit facts and knowledge about the phenomenon under investigation using a series of interview questions to the participants” (p. 87). I would like to examine how the school effectively supports and carries out TAI using an interpretive approach to understand the world of human experience (Cohen & Manion, 1994). This world is shaped through social interactions among research participants and the researcher. Semi-structured interviews provide a place of affinity between the researcher and participant to construct and interpret a new concept (Mills, Bonner, & Francis, 2006). As recommended by Lichtman (2013) the points to consider while semi-structured interviews were carried out were; the need to develop rapport (Oakley 1981) that helped the interviewee to feel relaxed; to select a mutually-agreeable location; to pay attention to physical surroundings and the interviewee’s body language. Interviews were conducted in a quiet, private room (Burns & Grove, 2005) at the participant’s choice of venue (Clarke 2006) and on a one-to-one basis to provide the participant freedom and confidentiality to be able to express their opinion without any fear (Denscombe, 2007).
The researcher organised the interview in various stages as suggested by Lichtman (2013): Planning – the researcher designed the questions using knowledge around the research area, so that the researcher would be able to generate some specific areas to be covered during the interview. The next stage to consider was at the beginning of the interview; this time should be utilised to provide initial information such as the purpose of the research, how the collected information will be used, and anticipated duration of the interview. Spradley (2003) refers to this stage as ‘apprehension’, as there is some degree of uncertainty between the participant and researcher. The next stage is the body of the interview. During this stage the researcher took notes with comments that will be followed-up later with the interviewees (Clarke 2006). During the interview the interviewer demonstrated good listening skills and prompts were done carefully to avoid leading the participant – a researcher’s belief as this could have had an affect on the participant’s answer (Moser and Kalton 1979). The use of notes was beneficial at the end of the interview to identify strengths and weaknesses of the interviewer (Ribbens, 1989). Spradley (2003) suggests three sub-stages for this:

- **Exploration** – once rapport is to be established, the researcher and the subject become more comfortable with each other; cooperation – represents the third stage. Here, mutual trust is established between both parties, and as a result, cooperation exists; participation – the last step in gaining rapport. After some time spent together, the informant begins to perceive his or her role as a teacher to the researcher. At this stage, complete participation is achieved. (p. 44).

Next stage, towards the end of the interview the researcher must be aware of the time, use a closing question, and thank the participant. The last stage is the post-interview stage where collected information needs to be organised and collated; this stage was completed on the same day. The interview was audio recorded (Rubin & Rubin, 2005) with the permission of the participant, as it helped during the data analysis stage; researchers was able to use the transcript of the interview. In a semi-structured interview open, direct, oral questions were used to prompt for comprehensive stories from the participant (DiCicco-Bloom & Crabtree, 2006). The type of questions used in
the interview were well planned to avoid any unforeseen embarrassment and therefore a pilot interview was carried out with a colleague (Treece & Treece, 1986). The interview schedules are presented in Appendix A (Teachers) and in Appendix B (Senior leaders).

**Sampling Selections**

The research was conducted in a state-funded secondary school in Auckland and was selected through purposeful sampling (Coyne, 1997). For purposeful sampling it is crucial in this school that TAI was already a major part of staff professional growth for improving teaching and learning. Besides, the senior leadership at this school was already encouraging and supporting staff to make an explicit link between TAI and the classroom pedagogy.

Two groups of individuals were selected from the participant school. Five semi-structured interviews were conducted with two senior leaders and three classroom teachers. The number of participants in qualitative research was determined to ensure variation in the sample used, as qualitative research is to describe and interpret rather than to generalise (Cohen et al., 2011). It was intended that this stratified sample of participants included one senior leader at the level of deputy principal in charge of school-wide professional learning and support, and the principal of the school. In addition, three teaching staff with a range of years of teaching experience participated to provide data that had a “complexity of view” (Creswell, 2002, p.8). It was anticipated that the data would provide information on the TAI practice from different staff perceptions, to co-construct the new knowledge. An email was sent to the school’s principal with a request for this research to be carried out and the aims of the research were shared in this email. The researcher sought participants by presenting the research proposal to the whole staff during a school briefing describing the aims of the research and then asking for volunteer participants.
Data analysis

Data analysis is defined by Lofland and Lofland (2006) as “a transformative process in which the raw data is turned into findings or results” (p.195). The choice of data analysis depends upon the selected methodology (Cohen et al., 2011). The answers were examined using inductive reasoning by the researcher not just interpreting spoken words but also by analysing the tone, pauses, confidence or uncertainty, and the body language. An inductive approach assists in briefly summarising data and forming significant links between the findings and research aims (Thomas, 2006).

The interview recording was transcribed into Microsoft Word exactly (DiCicco-Bloom and Crabtree 2006) immediately after the interview. Thematic coding was used to analyse the data collected from the transcripts. Thematic coding is recognised as a fundamental method by Denscombe (2007), Neuman (2011) and Lofland and Lofland (2006) for classifying and analysing common themes. The transcript was read along with any notes prepared during the interview, with the aim to identify any themes in the transcript and to become familiar with the data, from the participant’s perspective (Burnard, 1991). The analysing process for a semi-structured interview involved coding, organising, integrating and interpreting data (Reid, Flowers, & Larkin, 2005). The analysis of the text was useful with notes made about the first impression, and then the transcript was read again thoroughly. During this reading, relevant words, phrases, sentences or sections of transcripts were highlighted and this process is called ‘coding’ (Aberbach & Rockman, 2002; Fielding, 2001). ‘Coding’ is one of the most universally-used tools to analyse data collected from interviews (DiCicco-Bloom and Crabtree 2006). The decision about relevant words was taken based on something repeated several times (Fielding, 2001), something that surprised the researcher; something stated clearly by the participants as important; or something that has literature links. Coding was done impartially (Winter, 2000); Important codes were decided, and codes were brought together by classifying into various categories or themes (Thomas, 2006), and some less-important codes were dropped.
Qualitative research requires the researcher to undertake a reflexive position in relation to the research aims and the participants’ data. As the researcher becomes absorbed in the world of their participants, reflexivity enables an understanding of the influence of the researcher’s interpretation on collected data (Primeau, 2003). In qualitative research, this interpretation of data by the researcher is vital to generate new knowledge that reflects the extent of human experience. During the process of coding, a technique known as memoing was also used to confer thoughts to the various coded categories. Memoing was carried out using concept maps. Memoing as suggested by Birks and Mills (2011) is a key to create an appealing study that clarifies what the codes mean and to associate theoretical concepts to the codes and their relationships. This memoing process allowed themes to be emphasised under specific issues or merging various issues that helped to record the researcher’s perspective during data analysis to be used later in discussion.

Validity

Research is rigorous when it fulfils some specific criteria (Long & Johnson, 2000). In qualitative research, rigour is not about generalisation but must be displayed through integrity and validity (Yardley, 2000). The exact definition of ‘validity’ can be a highly contested aspect of social research. There are many definitions of validity, listed by Hammersley (1987) who defines validity as "An account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise" (p. 69). Validity is discussed in research literature along with reliability (Kerlinger, 1964; Hammersley, 1987; Winter, 2000). “Reliability and validity are tools of an essentially positivist epistemology” (Watling as cited in Golafshani, 2003, p. 598). Reliability also has various explanations like “an ability to measure consistently” (Black & Champion, 1976, p. 232); and “whether or not you get the same answer by using an instrument to measure something more than once” (Bernard, 2000, p. 47). Validity and reliability have different meanings in qualitative and quantitative methodologies (Cohen et al., 2011).
Furthermore, the participants were given the opportunity to check the transcript of their respective interview and to withdraw or modify their responses over ten days after the receipt of their transcript. A chance was provided for the participants prior to the interview, to ask any questions about the process by communicating directly with the researcher.

My research methods met internal validity (Le Compte, Preissle, & Tesch, 1993) by ensuring confidence in the data constructed socially. The research findings demonstrate authenticity by interpreting through the eyes of the participants. The data is presented using robust research methods. The findings are realistic, hence credible. The findings are critically analysed with significant reflection to interpret the participants’ comments to co-construct the outcomes portraying an intellectual audit trail (Carcary, 2009).

It was intended that the data collected and analysed from the semi-structured interviews to align with the research aims. Lastly, the transcripts of the interview were verified with the participants to ensure the conformity. During data collection, the researcher might become selective and biased in interpreting a document (Ahmed, 2010). Therefore triangulation by using a number of interviewees for semi-structured interviews demonstrates synchronised validity (Golafshani, 2003). Creswell (2002) defines ‘triangulation’ as forming converging themes by use of multiple ways in qualitative research to confirm validity. External validity, referred to as a generalisation of research for the wider population, is more of a positivist approach (Cohen et al., 2011), the generalisation in social research with qualitative methodology has been with the settings, people and situations providing rich data for the readers (or users of research) to decide if ‘transferability’ is likely. Therefore, the outcome of research requires a good description for transferability (Bogdan & Biklen, 1998).
Ethical Issues

The research approval from the Unitec Research Ethics Committee (UREC) has been carried out. A document with information about the nature of the research, and intention to carry out interviews and interview questions was created and shared with UREC. Upon gaining permission, an organisational consent form was given to the School Principal for signature. To get 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 electronically via the principal.

In the interview process, a number of possible ethical issues could arise. For example, if the participant were not informed about the area of study (DiCicco-Bloom and Crabtree 2006). There is a possibility that a participant could be superficially informed about the subject of research verbally on the telephone. To avoid this, a copy of the Ethics information sheet (Appendix C) and a consent form (Appendix D) was shared with the participants, so that the participant knows and understands the area of research (Wilkinson, 2001). Participants will be asked to sign the informed consent (Bryman, 2011) and consent was marked as voluntary (Wilkinson, 2001). The participant was informed about the area of study and how the interview process was to be carried out, and how the interview data will be used.

Along with this, participants were informed about their basic rights, the fact that at any stage a participant could withdraw and they can refuse to answer any specific question (Qu, & Dumay, 2011). Another possible issue could be that the interview process causes psychological stress to the interviewee. To avoid this, each participant were informed of all possible risks and psychological stress that could arise due to some questions related to the TAI process that this might affect the interviewee’s pride, or create stress during the interview (Punch, 1986). As recommended by Cardno (2003) the main aim of research ethics is to protect people taking part in research from any possible harm like physical, mental, emotional, and financial. The researcher needed
to be impartial when the participants commented or shared their opinions around some school policies, procedures, or on any other sensitive issue (Valentine, 2005). The researcher also needed to avoid culturally insensitive remarks during the interview by knowing the cultural background of the participants before the interview (Corbin, & Morse, 2003).

The literature suggests that protecting the confidentiality and anonymity of the participant should be the most important issue to pay attention to when the interviewing method is used in research (Burns & Grove, 2005; Longhurst, 2003). To avoid revealing the real identity of participants in findings, pseudonyms are be used (Allmark, Boote, Chambers, Clarke, McDonnell, Thompson, & Tod, 2009). Levine (1981) endorses that the facts that participants have shared will not be passed on to others in any form unless specific consent has been given. The participants and their information will not be exploited for personal gain, but were acknowledged for their contribution (Anderson, 1991). To check on the issue of bias and subjectivity, the researcher has maintained an audit trial and kept a log of data collection chronology (Schwandt & Halpern, 1988) and a copy of their interview transcript has been given to each participant to verify (DiCicco-Bloom and Crabtree 2006).

**Summary**

This chapter has described the methodology used in this research. A justification has been provided to explain the selection of an interpretive epistemological position and a qualitative approach. The selected method, a semi-structured interview has been explained and justified for the gathering of data. The chapter also outlines how the semi-structured interview data was analysed using coding and memoing. Validity and ethical issues were also discussed.
The following chapter four outlines the findings from the interviews conducted with the two senior leaders and the three teachers to gain their different perspectives on the implementation of the TAI in their secondary school and the supported provided.
CHAPTER FOUR
RESEARCH FINDINGS AND DATA ANALYSIS

Introduction

In this chapter, data collected from the five semi-structured interviews are presented. The purpose of the interviews was to collect the perceptions of three teaching staff and two senior leaders from a selected New Zealand secondary school about the support provided while carrying out TAI. The chapter begins by presenting a brief overview of the interview participants. The research questions used for the interviews provide the headings for the presentation of the data. The tables are used to highlight the frequency of specific features that emerged from the data.

The Research Participants

The interview Participants

For this dissertation, five teaching staff were selected from a medium sized secondary school in Auckland. Of these, the two senior leaders will be referred to as the Principal and the Deputy Principal and the teachers as Teacher A, Teacher B, and Teacher C in order to protect their identity.
Findings

Question One: Can you describe how the practice of ‘Teaching as Inquiry’ is carried out in your school?

The responses of the five participants are shown in Table 4.1 below. Three key features emerged from the responses to this question: the number of inquiry cycles carried out during a year, a personal selection of the inquiry topic, and whether the inquiry topic is linked with the school’s annual goals.

<table>
<thead>
<tr>
<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>The number of inquiry cycles per year</td>
<td>Not stated</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>A personal selection of the inquiry topic</td>
<td>2 Cycles</td>
<td>0 Cycles</td>
<td>0 Cycles</td>
</tr>
<tr>
<td>Inquiry topic/s is linked to school’s annual goals</td>
<td>0 Cycles</td>
<td>2 Cycles</td>
<td>2 Cycle</td>
</tr>
</tbody>
</table>

The principal of the school did not suggest anything in the interview about the number of times the inquiry cycles were repeated during one academic year. However, the number of cycles per year has been suggested by the other interviewees.

Deputy Principal: Last year we had one in term two as well as one in term 4.

Teacher C: We do two inquiries in a year; one is either faculty or school focussed.
The staff interviewed suggested that inquiry topics may or may not link with the school’s annual goals. It is significant that there was a different perception conveyed by the principal and the deputy principal.

*Principal:* We have tried to streamline the professional learning inquiry cycle and delink it from the annual goals.

*Deputy Principal:* Both Inquiry goals were connected with the annual goals for the group that I led.

*Teacher B:* Currently this year, we were given two annual inquiry goals, and these were given by school itself. The third inquiry goal which is pretty much optional. The third one was my personal goal, which I wanted to focus on.

So this highlights that at this school a minimum of two TAI cycles are carried out by the staff and at least one of the TAI cycles should have links with the school’s annual goals. It has been evident that the expectation was to do three inquiry cycles, the third cycle being optional.

**Question Two:** How do you design and run your own ‘Teaching as Inquiry’ practice?

The responses of the five participants are shown in Table 4.2 below. Three features emerged from the responses to this question: collecting evidence from the baseline data, an annual goal to implement Middle Year Programme (MYP), and enabling more student agency.
Table 4.2 Design of Teaching as Inquiry at the selected secondary school

<table>
<thead>
<tr>
<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collecting evidence from the baseline data</td>
<td>Not stated</td>
<td>Not stated</td>
<td>✓</td>
</tr>
<tr>
<td>An annual goal to implement Middle Year Programme (MYP)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Enabling more student agency</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Teacher A: finding baseline data and then coming up with looking at those and your hunch, what part of my practice and then looking at the results?

Teacher C: The baseline data assists me to answer some questions around my hunch.

Both senior leaders did not state anything about the use baseline data for developing their TAI while the three teachers acknowledged their use of baseline data.

In 2017, the school had introduced an MYP programme (International Baccalaureate) for juniors, and this has been one of the school’s annual goals in 2018. A vital principle of the MYP programme is to connect junior students globally and to appreciate diversity. The MYP programme’s prime focus is to change teaching pedagogy to ensure that teaching and learning challenges and extends students. Therefore it ties in with the TAI topic selected for one of the inquiry cycles by the teachers. Except for Teacher C, every other participant has stated that goals for the inquiry cycle were linked with implementing the MYP.

Deputy Principal: The implementation of the MYP which the driver for the inquiry was to improve our pedagogy to enable more student agency in our classroom. We get an idea of what student agency looks like in relation to specific pedagogies?
The other feature that predominately emerged around this question is enabling more student agency through the TAI approach.

*Teacher A:* Senior leadership team occasionally throwing out some reading about student agency this could help.

*Teacher B:* So the big question is this how I am going to incorporate greater student agency into my year 10 DT program by facilitating deeper learning.

Participants suggested that when staff designed their Teaching inquiry staff looked at baseline data, at least one TAI cycle is around the implementation of MYP programme, and most participants mentioned that during their TAI they do focus on enabling more student agency in classroom practice.

**Question Three: What factors enable you to carry out the ‘Teaching as Inquiry’ effectively?**

The responses of the five participants are shown in Table 4.3 below. Three features emerged from the responses to this question: allocated time is critical, support from a good facilitator, and collaboration and sharing with staff.

*Table 4.3 Factors for effective Teaching as Inquiry at the selected secondary school*

<table>
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<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A    B   C</td>
</tr>
<tr>
<td>Allocated time is critical</td>
<td>✓</td>
<td>✓</td>
<td>✓    ×    ✓</td>
</tr>
<tr>
<td>Support from a good facilitator</td>
<td>×</td>
<td>✓</td>
<td>✓    ✓    ×</td>
</tr>
<tr>
<td>Collaboration and sharing with staff</td>
<td>×</td>
<td>✓</td>
<td>✓    ✓    ✓</td>
</tr>
</tbody>
</table>
Deputy Principal: Time is always the thing people feel that it is of value when you give them time. So to have that Wednesday morning is really important for them.

Teacher A: Again, I think time, a good facilitator and an achievable goal are important factors.

Teacher C: Inquiry is not something that can be done very quickly, so been given the time to be able to work on it and to trial out things is important.

The support of a good facilitator emerged as another common factor in three interviews out of the five conducted.

Deputy Principal: I think that the facilitator role is really important, and the skill of the facilitator is very important to keep people on that inquiry cycle.

Teacher A: The way of holding people accountable is one of the facilitator’s role. It is so easy for the PLG to drift away to something else, and then the facilitator bringing them on, so this role is totally critical.

Another essential factor that occurred in most interviews as an important factor that enabled the TAI to be carried out effectively is a collaborative approach. Apart from the Principal, the other participants highlighted this as a critical factor during the TAI process.

Deputy Principal: I think the other really important characteristic of success is a sharing of what people have learned and sharing of other successful people’s inquiry stories. We had time for collaborative learning and planning around the MYP.
Teacher B: Sharing ideas and working collaboratively with the PLG groups, so many are getting the benefit.

In response to the question around factors that enable an effective TAI, the majority of interviewees highlighted time as the most crucial factor besides support from the facilitator and working collaboratively. Some other factors were highlighted in individual interviews like the Principal suggested the allocation of funds for the PLD process. Teacher B suggested that linking PLG to the appraisal process makes it more effective. Teacher B also get positively motivated when the school invests in the professional development of individual staff by allowing them to upskill using external resources. Whereas Teacher A also feels firm about having some trust that staff are going to utilise the time appropriately and for staff to be treated as professionals.

**Question Four: Can you describe how ‘Teaching as Inquiry’ helps in your ongoing professional growth and learning?**

The responses of the five participants are shown in Table 4.4 below. Three features emerged from the responses to this question: TAI allows staff to do innovative things, a teacher’s mindset that TAI makes a difference, and TAI is a new approach to teaching.

**Table 4.4 Teaching as Inquiry and Professional Growth and learning**

<table>
<thead>
<tr>
<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>TAI allows staff to do innovative things</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>A teacher’s mindset that TAI makes a difference</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TAI is a new approach to teaching</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

The feature that the TAI allows staff to take an innovative approach has been mentioned by senior leaders and Teacher C. From the principal’s point of view innovative ideas are coming from external professional development and that is how the principal is trying to link this innovative approach to inquiry.
Principal: Really pushing teachers to go out to conferences and present, there is a lot of pride about what we do, and I think that is another way of ensuring that we are doing some innovative stuff here you know, so there is a link between teaching as inquiry and innovation.

However, the deputy principal and Teacher C quote a direct link between the TAI and developing an innovative approach.

Deputy Principal: We teachers are professionals, and we need to be constantly looking at how we can add value to our practice. How we can be open-minded and innovative, end up with new and interesting ideas and developments and the whole area of teacher/teaching.

Teacher C: It’s more engaging for me as a teacher, I am a lot more motivated to try and do little things to make a difference in that learning space because there are so many innovative ideas that can be trialed out and it’s treated as learning when it does work out and how you anticipated it.

Interview responses also comment that TAI brings a shift in the mindset of staff:

Principal: It is all about the mindset, so what emphasis does the school have to shift that mindset, we have got staff who use TAI as a vehicle to determine how we teach for changing student learning into inquiry learning.

Deputy Principal: Staff needs to be open-minded to try new teaching ideas.

All three participant teachers feel that TAI provided a place to try new ideas, strategies, and upskill staff with current technology-driven changes. This, in turn, helps to meet the needs of the 21st-century learner. However, in response to this question that TAI
helps in professional growth and learning most participants did acknowledge that the teacher’s mindset is a vital feature to trust that TAI enhances professional learning.

**Question Five: What structures does your school have in place to ensure that the ‘Teaching as inquiry process is being followed?**

The responses of all the participants are shown in Table 4.5 below. Three features emerged from the responses to this question: staff do inquiry related presentations, TAI involves reflections/interprets with evidence, and TAI linking with appraisal.

### Table 4.5 Teaching as Inquiry and compliance

<table>
<thead>
<tr>
<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Staff do inquiry related presentations</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TAI involves reflections/interprets with evidence</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TAI linking with appraisal</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

All participants stated that the completion of the inquiry cycle involves group presentations within the school or maybe at external conference venues to share the teaching pedagogy with others. The process also involved regular reflection around the finding that emerged from the TAI process. All of the teachers and the Deputy Principal shared that TAI is embedded into the appraisal process. However, the principal suggested that TAI is not linked with the performance appraisal in order to avoid a compliance issue.
Question Six: During your ‘Teaching as Inquiry’ cycle, how is ongoing support provided?

The responses of all the participants are shown in Table 4.6 below. The responses of all the participants identified two main features that emerged from the responses to this question: critical friend during the TAI process and a good facilitator.

Table 4.6 Ongoing support during Teaching as Inquiry

<table>
<thead>
<tr>
<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Critical Friend during the TAI process</td>
<td>x</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>A good facilitator</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Deputy Principal: I think that the facilitator role is really important in TAI, this could become a barrier in effective TAI if some people did not actively facilitate TAI.

Teacher A: The way of holding people accountable is one of the facilitator’s role. The facilitator does not get much support, I think facilitators need to be trained, and I am one of the facilitators, so I am speaking from a facilitator’s perspective. I have been a facilitator four times and have not had any support and have been up to my own thing while working with PLG. Plus when I have been facilitating my inquiry affects, as I cannot give enough time to my own TAI practice. Someone from outside as facilitator is more helpful.

All teacher participants also identified a critical friend as a form of support during effective inquiry.
Teacher B: sometimes we can work alongside a critical friend who could be another colleague from my school who will help me or just by giving me some ideas and strategies and they can share the things which they have trialled.

Teacher C: A critical friend can say and bring in a different perspective and give some constructive feedback.

On the question of the type of ongoing support given during TAI, a critical buddy or a critical friend has been highlighted by all teacher participants and the role of facilitator has also been identified by most interviewees. Besides these two features, it has been mentioned by most participants that staff are released for external professional development, providing it is linked to the inquiry topic.

Question Seven: During the ‘Teaching as Inquiry’ cycle, how is ongoing support provided by senior leaders at your school?

The responses of all the participants identified two main features that emerged from the responses to this question: having time to do an inquiry and provision of external professional development.

<table>
<thead>
<tr>
<th>Table 4.7 Ongoing support by senior leaders during Teaching as Inquiry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response Data</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Having time to do an inquiry</td>
</tr>
<tr>
<td>Provision of external professional development</td>
</tr>
</tbody>
</table>
Teacher A: As per participant teaching staff having the Wednesday time in the morning is helpful for ongoing TAI process. Google classroom set up with reading resources related to TAI, No support given to the facilitator.

Teacher C: Allowing to attend external PD is helpful. Senior leadership gathers staff feedback on how to improve the TAI practice. While working on TAI staff work with small groups, within this group, staff observe each other in class and give critical feedback to improve teaching pedagogy. Outside experts are invited to run PD sessions with experts.

Senior leadership suggests that support is provided by providing regular Wednesday morning PD time. In order to implement annual goals, the training is provided to the staff on MYP, an area of school-wide interest at junior level for stronger student agency and resilience. The senior leadership also support teaching staff by being part of PLG and participating in the TAI process.

Principal: We steer the TAI process, we nurture it, and ensure teaching staff actively participate and attend it. Generous funding is provided around this.

Deputy Principal: We being part of PLG senior leaders demonstrate that we value the process. We also encourage staff with expertise and excellent pedagogical practices to share their strategies with the rest of the team.

Senior leadership team supports the staff to present their findings at the external conferences, and staff is allocated scholarships to look at MYP in depth in other countries.
Question Eight: What barriers exist when carrying out the ‘Teaching as Inquiry’ especially around the support given during this practice?

The responses of all the participants identified two main features emerged from the responses to this question: Time for TAI cycle was too short, Poor Facilitation of PLG.

Table 4.8 Barriers during Teaching as Inquiry practice

<table>
<thead>
<tr>
<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Principal</td>
<td>Deputy Principal</td>
<td>Teachers</td>
</tr>
<tr>
<td>Time for TAI cycle was too short</td>
<td>×</td>
<td>✓</td>
<td>✓ x ✓</td>
</tr>
<tr>
<td>Poor Facilitation of PLG</td>
<td>×</td>
<td>✓</td>
<td>✓ x ✓</td>
</tr>
</tbody>
</table>

Principal: Workload and mindset of the staff.

Teacher A: Not enough time to complete one inquiry cycle before we have to move to the next, so it becomes quite a rush. Effective facilitator.

Question Nine: How do you rate the success of your ‘Teaching as Inquiry’ practice?

This majority of the interviewees commented on the value of TAI for the whole school and the positive impact of TAI on the individual teachers. The participants indicated that TAI assists them to stay motivated in their teaching practice. However, on the school-wide success rate, the responses varied. The common feature identified by three participants (2 senior leaders and Teacher A) around school success has been that TAI process provided an innovative approach to learning across the school curriculum.
Deputy Principal: I believe we are at a stage where we are developing a coherent professional learning plan, structuring MYP really well in this overall programme. Need to add a longer time frame for the inquiry process maybe six months and also need to organise training for the facilitator.

Teacher A: As a participant teacher in inquiry, I would rate the TAI process very highly at this school. However, from the facilitator’s point of view, we need to make some changes. As a group, it is easy to drift in and out of context dialogue and in a group presentation, some members may not become significantly visible.

Teacher C: I am a lot more motivated to try and do little things to make a difference in that learning space because there are so many innovative ideas that can be trialed out and it is treated as learning when it does work out and how you anticipate it.

Question Ten: What are the characteristics of a successful implementation of the teaching as inquiry cycle?

The responses of participants around this question highlighted as an essential feature, the teacher’s readiness to use this approach with the belief that TAI is going to make a difference. Besides, the right mindset to implement TAI reflective practice is another important aspect highlighted by all the participants. The two other features that participants identified has been the importance of creating a good infrastructure to run TAI a successful TAI process that also allows staff to select a TAI topic of personal interest.
4.9 Characteristics of successful implementation of Teaching as Inquiry cycle

<table>
<thead>
<tr>
<th>Response Data</th>
<th>Principal</th>
<th>Deputy Principal</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher’s mindset to see value in the process</td>
<td>✓</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Reflective practice</td>
<td>✓</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Good infrastructure for TAI</td>
<td>✗</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>TAI topic as per teacher’s personal interest</td>
<td>✗</td>
<td>✓</td>
<td>✓ ✗ ✓ ✓</td>
</tr>
</tbody>
</table>

Principal: Mindset, reflective approach, adaptive to their students exploring new ideas.

Deputy Principal: Resourceful process, strong culture, good structure but not that everyone is doing the same stuff, there should be room to extend TAI to a whole year if someone needs to investigate it further so it should not be rushed. People should also be time-wise at the same time. Lastly, sharing inquiry stories with one another makes TAI very successful.

Teacher A: Analysing the data and reflection to show what has changed. The inquiry should be as per the teacher’s interest rather than forcing them to decide. Treating staff professionally rather than be treated as naughty year 10s. Staff using TAI time wisely to be a brilliant reflective practitioner. A proper teaching inquiry should be differentiated, as we know, teaching must be differentiated and yet the way we teach our teachers is not. It is very much one size fits all. Like students’ teachers should be given a full agency of selecting what they prefer to work on rather than the school’s interest programme. Some teachers may need more scaffolding. Facilitator’s role is critical as some may be naturally gifted dealing with colleagues; others may find managing staff difficult when they are off task during PLG time.
The responses of participants around this question highlighted as an essential feature, the teacher's readiness to use this approach with the belief that TAI is going to make a difference. Besides, the right mindset to implement TAI reflective practice is another important aspect highlighted by all the participants. The two other features that participants identified has been the importance of creating a good infrastructure to run TAI a successful TAI process that also allows staff to select a TAI topic of personal interest.

**Summary**

The analysis of the data collected from the five semi-structured interviews on leadership support for teaching staff carrying out Teaching as Inquiry in a New Zealand secondary school has led to the emergence of two main themes and a few subthemes that will be discussed in the following chapter five with support from the literature reviewed in chapter two.

These two themes are 1) time is a critical part of TAI, 2) excellent facilitation during the TAI process, and a few other features are interlinking the two main themes. It is commendable that weekly time for TAI is provided during the year. However, as the staff have to carry out at least two to three inquiry cycles annually, the time becomes limited, and this impacts on the effectiveness of the inquiry. Around the support provided during carrying out the TAI practice, the features that have emerged are the role of facilitator and the availability of external professional development. Another aspect that has emerged and therefore worth discussing has been the school's area of interest around the successful implementation of the MYP program and the staff selection of their inquiry topic which in turn impacts on staff motivation or their mindset to carry out an effective inquiry.

The next chapter five will discuss the key findings with support from the literature review. The conclusions will be drawn from the findings with accompanying recommendations for senior leaders and teachers in the secondary sector of education.
CHAPTER FIVE
DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Introduction

This chapter discusses two significant findings with support from the literature reviewed in chapter two; time is a critical part for TAI and the support provided by facilitator in PLG.

In this research the interview participants recognised the role of the senior leadership in supporting teachers carrying out TAI and have identified several significant components to successfully implement TAI in a New Zealand secondary school. This chapter draws some conclusions, provides recommendations senior leaders and teachers in New Zealand secondary schools, acknowledges the limitations of the research conducted and makes recommendations for future research.

_Time is a critical part of TAI_

One of the key themes that has appeared in the research findings through semi-structured interviews with the principal, the deputy principal, and three teachers is the availability of time to carry out the TAI. This time has been perceived as an important aspect in the following ways; time for systemising the TAI process, time provided by the senior leadership for an effective TAI and Time as a barrier.
Time for systemising TAI

The data gathered from the interviews with the senior leaders and teachers have acknowledged time as one of the significant components to carry out an effective TAI. From the perspectives of senior leaders and teachers, both groups appreciate the fact that the school provides a one hour weekly time slot to devote to TAI. As the principal has commented, *I mean you've got the Wednesday morning time. That's the most obvious factor for TAI to be effective.* This has been supported by the deputy principal stating, *Time is always the thing people feel that is of value when you give them time. So to have that Wednesday morning for TAI is really important for them.*

In relation to these findings time emerges as one of the critical factors to enable an effective inquiry. Having this time available on every Wednesday morning with a late start for the students, was endorsed by all of the teachers. They noted, that they were able to spend this one hour regularly to organise their TAI process by analysing baseline data, to identify students' needs, to build their hunches, to relate it to research literature, to implement a change in pedagogy, to analyse outcomes due to a change in practice, and lastly to reflect (Teacher A, B, C). Allowing the time available on a weekly basis, is also identified as an important aspect for a successful TAI in the literature review. As stated by Emerling (2010) that teachers' recognise the opportunity to exchange and discuss experiences with colleagues as important factor for professional development, but this needs ample time to manage the collaboration well. Geerdink, Boei, Willemse, Kools, and Van Vlokhoven (2017) also supports this by stating that teachers need time when involved in research based teaching activities as research involves reflection, careful thinking. Geerdink et. al. (2016) further adds that research based professional development is successful only when, sufficient time is available. Aitken and Sinnema (2008) similarly relates time as an important factor during the TAI practice, as TAI has various stages as stated in literature review chapter two; focus of inquiry, deciding the teacher actions, and lastly establishing the link between the teacher's actions and the students outcome.
Time as senior leadership support

All of the participating staff recognise this provision of weekly time to conduct TAI as a positive ongoing support provided by the senior leadership of the school, which reveals their commitment to the TAI process. All stages in the TAI require a teacher to be a reflective practitioner. The provision of this regular weekly time, assists in reflective practice and provides opportunities for teachers to engage in critical reflection that contributes to a successful TAI. All three teachers envisage this time given, as support from the senior leadership team.

Many authors in the literature review, support that reflection assist teachers to identify the needs of the classroom and to bring a change to teacher’s practice to meet these needs (Roth, Garnier, Chen, Lemmens, Schwille, & Wickler, 2011; Robichaux and Guerino, 2012; Lyngsness, 2012).

Time as a barrier

Time emerged as an important theme in this research to carry out a TAI with having a regular weekly allocation helps to maintain continuity for the TAI while signifying ongoing support from the senior leadership. However, on the other hand, time has also been suggested as a barrier by all of the interviewees. The findings of this research indicate that the time becomes a barrier when staff are carrying out more than one inquiry cycle annually. Many staff feel that they are not being able to devote sufficient in-depth time to an inquiry cycle like the collecting of data and the data analysis that can result in implementing changes in a rush. The deputy principal also suggests that time becomes a barrier when staff does more than one inquiry so the inquiries are rushed and this is due to a work load issue. The workload to some extent directly or indirectly, relates to time being limited to perform other tasks simultaneously for teaching while implementing a TAI. The principal also affirms that the workload of the teacher can act as a barrier to an effective TAI. The three teaching staff agree that limited time affects the quality of each TAI cycle.
Larson, Wilson, Larbi-Cherif, and Horn (2012) examined school based collaborative professional development carried by teachers, their findings recognises the importance of regular collaborative time is effective for teachers’ professional development and is necessary to develop the desired change in pedagogy.

The findings of this research identify the main reason why time becomes a barrier is mainly because staff carry out multiple TAI cycles annually resulting in rushing through the entire process. However, to address this issue the deputy principal shared, *staff feedback we got on TAI and some of the staff comments were; it's hard because we sort of only had that time frame, it was a bit too short to really go through that double cycle twice and it was very quick and brief to get through it.* This statement by the deputy principal adds to the fact that time is a barrier as identified in the research findings, but at the same time, there is a way to address this issue by ensuring that staff maintain a continuity in the inquiry process. This links time as a barrier identified as an issue with another issue that has been highlighted in this research, the need for an effective facilitation during the TAI process so that staff do not feel the pressure of time to rush through their TAI. The deputy principal perceives that using the findings of the first TAI cycle and to continue implementing these findings in the following TAI cycle, results in a stronger impact on teachers and student learning and revisiting the professional learning allows teachers to refine their understanding and apply it more effectively in their classrooms. This finding is in agreement with earlier experimental work carried out by Supovitz and Turner (2000) and reinforces that if the professional development is of shorter length and intensity, then they are relatively ineffective. The results of their research (Supovitz & Turner, 2000) endorses that classroom culture and teaching practice show a bigger shift only after rigorous and sustained staff professional development. Similar results are emphasised by Darling-Hammond, Hyler, and Gardner (2017) in their research that professional development that offers multiple opportunities for teachers to participate in professional learning around a single set of concepts or practices, has a greater chance of transforming teaching practices and student learning.
Professional Learning Group facilitator

Role of facilitator

The findings show that the model for the inquiry process had various cross curricular groups in the school and each group worked on a different TAI topic. Staff picked their groups mainly based upon their personal interest or an area that they would like to improve on. Each group was led by a facilitator, who was not necessarily an expert around the group’s topic, but is a teacher with a few year’s teaching experience and is picked to lead the group either because he/she has a strong desire to explore the TAI’s specific topic or has volunteered to lead the group. This is supported by Wood (2015) who suggests that the facilitator assists staff by checking their deadlines and whether they are on track in terms of completion of the TAI. An expert scaffolding can support the effective implementation of new strategies and approaches by teachers (Darling-Hammond, Hyler, and Gardner; 2017).

Facilitation and support

Another issue that has emerged from most interviewees has been the critical role of the facilitator and the importance of facilitation during the implementation of a TAI.. On the question of the factors that contribute to an effective ‘Teaching as Inquiry’, three out of five participants thought that good support from a facilitator is essential to maintain an effective inquiry. The research on TAI by Ermeling (2010) recognises that even motivated and productive professional learning teams also need facilitation to maximize the teacher inquiry experience. Ermeling (2010) mentions that a trained dedicated leader manages to create a safe environment for PLG while guiding the group, moderating discussions, assisting staff for deeper understanding, and complimenting support during pressure. This is being reinforced by Lotter and Miller (2017) who recommend that training facilitators in a more structured setting will enable
facilitators to provide effective guidance to teachers while implementing inquiry in their classrooms. They also suggest that significant instructional changes are more likely when teachers work in groups led by trained leaders. Andrews-Larson, Wilson, and Larbi-Cherif (2017) has accentuated the significant role of facilitators in building a PLG, setting the rules for this group, encouraging staff participation in PLG discussion, and guiding the teachers to link them back to classroom pedagogy. The use of external expertise to run long term professional training at institutions is supported by the following authors (Remillard, 2005; DeLuca, Shulha, Luhanga, Shulha, Christou, and Klinger 2015). It can be tricky for the facilitator to manage this while being sensitive towards the group’s needs and this has been supported by Nelson and Slavit (2008) who emphasise that facilitators must be sensitive to the group needs and must be able to create a safe space to collaborate in professional groups. The findings of my research supports the recommendations of Andrews-Larson, Wilson, and Larbi-Cherif (2017) that it is necessary to identify the knowledge and skills facilitators must have to lead PLG and then put practises in place to develop these knowledge and skills.

Conclusions

TAI has appeared as a main form of professional learning in the twenty-first century. TAI involves teachers in collaboratively exploring features of their professional practice by examining student responses to instruction, resulting in new understandings and changes in classroom teaching. However, despite the increased presence of inquiry research on TAI, the process is still to be refined. The purpose of this study was to examine how the senior leadership support the process of TAI, how the teachers perceive the TAI for professional growth, and whether staff have adequate support to be able to implement the TAI effectively. Based upon the findings of semi-structured interviews and the analysis of themes in the literature review, it has been identified that TAI is accepted by all five interviewees as the most dominant professional learning tool. Teachers benefit from the process of collaborative inquiry and TAI has started showing some shift in student engagement and performance. The process of TAI at structural and technical level is well understood by the participating staff and the
school has been part of the TAI process for more than five years. However, the purpose of TAI is not thoroughly understood, in terms of bringing a sustainable shift in professional practice of all the teachers carrying out a TAI.

This research also highlights the significance of support from the senior leadership of the school with a regular weekly time allocation and ongoing support to the facilitators and teachers while carrying out an inquiry process. The study has also shown that it is essential that the senior leaders are seen as part of the inquiry process and able to analyse factors for the successful implementation of the inquiry.

Finally, this research is important to teachers in that it is eventually the improvement of their competencies that certainly influences teaching and learning. Teachers need to recognise TAI as a vital professional learning tool to build strong pedagogy that supports student engagement and performance. It is essential that staff embrace TAI with a mindset to transform their teaching practice and to welcome a new approach and different strategies in class so that all staff with a collaborative effort, can build an innovative school.
Figure 1: Features emerging from the research that supports linking TAI with Student’s Achievements

As suggested in the conclusion, the two main features that emerged in the current research are time and the role of facilitators. These are shown in the middle of this figure and other minor features identified in this research are also included to show how they all compliment each other to link TAI practice to ultimately enhance the student achievements.
Recommendations for Senior Leaders and Teachers

1. School leaders need to create a culture among teachers that allows TAI to be adopted as a fundamental tool for professional learning. TAI needs to be accepted universally as a process that is embraced to transform teaching practice especially while supporting the priority learners, that is the students who are likely to be at a disadvantage due to socio-economic or other reasons.

2. Schools that are more successful in implementing the TAI need to share their success stories nationally through Te Kete Ipurangi (TKI). However, most of these stories focus mostly on organisational steps of the TAI process and then discuss the outcomes. Instead, they need to provide a more in-depth account on how participating staff reflected on establishing the inquiry focus, what and exactly how support was available by leaders for the teachers who struggle to carry out deeper level critical reflections rather than using a defensive approach of pretending that TAI is shifting their practice.

3. As identified during this research, time is critical during every step of the TAI process, therefore it is necessary that schools provide a sufficient amount of time for each step to ensure that teachers involved in the TAI process are managing it within that time frame in a well-balanced and self-regulated way. To make this occur successfully, there is a need that teachers make the TAI explicit among the stakeholders of senior leaders, teachers, parents and students. The student voice could become a significant inquiry evidence tool rather than just relying on the students’ performance data.

4. Leaders or staff who are involved as facilitators during the TAI process need to be regularly guided and informed to maintain uniform professional learning school-wide, to be trained to support staff to build ownership, to be able to provide feedback to teachers around inquiry related learning objectives, to be able to ask critical reflective questions, to be able to train staff to be critically
reflective practitioners and, to ensure that the inquiry is guided towards students’ classroom engagement and achievement. It is important as in most schools, facilitators are in-house teachers participating as well in their own inquiry. These facilitators need an additional time allowance to maintain their own TAI practice above the facilitating of the PLG.

**Limitation of current research**

This research has been carried out for a 60 credit dissertation as a partial fulfilment of the requirement for the degree of a Master of Educational Leadership and Management. The time factor to complete a dissertation is very limited in terms of sample size and the method adopted. The current study is based on a relatively small data set compromised of two senior leaders and three teachers in the context of one New Zealand secondary school. Although this research used only one method of semi-structured interviews, the findings showed clearly the different perspectives of the senior leaders and the teachers. The literature reviewed showed that there is limited research on the implementation of TAI within the context of New Zealand schools and there is scope for future research proposed below.

**Recommendations for Future Research**

The findings of this research contribute towards the knowledge about implementation of TAI in a New Zealand secondary school. This study has highlighted the factors like regular availability of time along with leadership support in order to make TAI very effective. However, the carrying out of the process becomes challenging due to the other work load issues and varied needs of individual teachers while carrying out the process. This is where the role of facilitator becomes far more crucial. The TAI process
is an effective form of reflective practice. Most teachers are equipped well to create the infra-structure to carry out reflective practice, but not every teacher has necessary skills and abilities to carry out in-depth reflections, as reflections would help them to critically analyse without being defensive about their teaching role. Unless this reflective phase of TAI is well managed by the teachers, the shift in pedagogical practices is not sustainable. Further and more widespread research is needed about the facilitator’s role not just in supporting teachers to manage a smooth transition between the steps of TAI but to guide and train staff to carry out in depth reflections. Teachers need to measure not only the success of the inquiry by looking at the students’ improved learning outcomes but also, to link the success of the TAI with their sustained personal professional growth.
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Appendix A

Interview schedule for teachers

Name of interviewee: _________________________

Name of organisation: ________________________ Date: ___________________

1. Can you describe how the practice of 'Teaching as Inquiry' is carried out in your school?
2. How do you design and run your own 'Teaching as Inquiry' practice?
3. What factors enable you to carry out the 'Teaching as Inquiry' effectively?
4. Can you describe how 'Teaching as Inquiry' helps in your ongoing professional growth and learning?
5. What structures does your school have in place to ensure that the 'Teaching as inquiry process is being followed?'
6. During your 'Teaching as Inquiry' cycle how is ongoing support provided?
7. During your 'Teaching as Inquiry' cycle what kind of support is provided by senior leaders at your school?
8. What barriers exist when carrying out the 'Teaching as Inquiry' especially around the support given during this practice?
9. How do you rate the success of your 'Teaching as Inquiry' practice?
10. What are the characteristics of successful implementation of the teaching as inquiry cycle?
Appendix B

Interview schedule for senior leaders

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

1. Can you describe how the practice of ‘Teaching as Inquiry’ is carried out in your school?
2. How do you deliver, communicate, and facilitate ‘Teaching as Inquiry’ practice among teaching staff?
3. What factors enable your school to carry out the ‘Teaching as Inquiry’ effectively?
4. Can you describe how ‘Teaching as Inquiry’ helps in ongoing professional growth and learning of teaching staff at your school?
5. What structures does your school have in place to ensure that the ‘Teaching as Inquiry’ process is being followed?
6. During ‘Teaching as Inquiry’ cycle how ongoing support is provided to the participant staff at your school?
7. During ‘Teaching as Inquiry’ cycle what kind of support is provided by senior leaders to the participant staff at your school?
8. What barriers exist when carrying out the ‘Teaching as Inquiry’ especially around the support given during this practice?
9. How do you rate the success of ‘Teaching as Inquiry’ practice at your school?
10. What are the characteristics of successful implementation of the teaching as inquiry cycle?
Appendix C

Text of the email that was sent to the Principal of the school that participated in my research requesting to forward it to the teaching staff.

My name is Manmeet Sandhu. 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 60 credit Dissertation which forms a substantial part of the course.

The aims of my project are:

1. To examine the practice of ‘Teaching as Inquiry’ in one New Zealand secondary school
2. To find out senior leaders’ perceptions of how support is provided to carry out ‘Teaching as Inquiry’
3. To find out teachers’ perceptions of how support is provided to carry out ‘Teaching as Inquiry’
4. To investigate the school leaders’ and teachers perceptions for the successful implementation of ‘Teaching as Inquiry’

I request your participation in the following way. I will be collecting data using an interview schedule that would last approximately 30-45 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 Dr Josephine Howse and may be contacted by email or phone. Phone: (09) 815 4321 ext. 8348 Email: jhowse@unitec.ac.nz

Yours sincerely
Manmeet Sandhu
Appendix D

Participant Consent Form

DATE: _______________________
TO: _____________ [participant's name]
FROM: Manmeet Sandhu

PROJECT TITLE: An Investigation of the practice and Support of Teaching as Inquiry in a New Zealand secondary school

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: ……………………
Full name of author: MANMEET SANDHU
Full title of the dissertation: An Investigation of the Practice and Support of Teaching as Inquiry in a New Zealand Secondary Sch Practice Pathway: TE MIRO POSTGRADUATE
Degree: Master of Educational Leadership and Management
Year of presentation: 2019
Associated URL link(s) (OPTIONAL for example ORCID ID): ...........................................
Principal Supervisor: Dr Josephine House
Associate Supervisor: Prof. Carol Cardno

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Signature of author: ____________________________
Date: 10th July 2019

ADMINISTRATION
Email this form and final PDF of dissertation to David Church dchurch@unitec.ac.nz