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**Factors that influence the implementation and practice of
team-teaching for English and Social Science teachers in
secondary innovative learning environments in Aotearoa
New Zealand**

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Abstract

Team-teaching in secondary school innovative learning environments (ILEs) in New Zealand is an emergent area of pedagogical practice and there is currently no research exploring the ways it can be supported by school leaders. Team-teaching has emerged as a result of national and global changes in education policy over the past decades. Both ILEs and team-teaching are viewed as providing a pathway to increasing specific knowledge, competencies and dispositions for students in the face of significant global changes.

The purpose of this research was to:

- a) identify important factors that influence the implementation and practice of team-teaching in secondary school ILEs, and;
- b) seek methods school leaders might employ to optimise factors that influence teachers in their team-teaching practice.

Much research has been done about team-teaching at primary level and in inclusive education settings internationally. However existing research largely focuses on the pedagogical practices teachers might use and has not been focused on the leadership of team-teachers in mainstream secondary schools or ILEs. This research aimed to contribute to the literature by examining the specific contextual factors presented by team-teaching in secondary ILEs in New Zealand, and the ways school leaders might optimise these factors.

The sample groups for this research were drawn from English and Social Science teachers and heads of department (HoD) from six secondary school ILEs in New Zealand. The research spanned two phases, drawing on a mixed-methods approach to conduct semi-structured interviews with a small sample, before conducting a survey with a larger group of teachers and HoDs.

The findings of this research largely reinforce the literature on team-teaching as similar factors were identified. A new contribution is made by considering how time is interconnected with professional relationships, along with the importance of evaluating the impact of changes in practice on students. Collectively, these interconnected factors influence teacher motivation. Additionally, the formation of individual teacher identity is reconceptualised for those team-teaching in highly visible ILEs, when the mitigating effect of career stage is considered. This research also highlights the increased time, space and support that teachers and HoDs require to develop their relational practice to create effective team-teaching partnerships in secondary school ILEs due to their involvement in multiple teams.

It is concluded that school leaders may need to re-evaluate the process of supporting teacher change and pedagogical adaptation for those working as team-teachers in secondary ILEs in New Zealand.

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Chapter One: Introduction

This study focuses on the leadership of team-teaching for English and Social Science teachers in secondary innovative learning environments (ILEs) in Aotearoa New Zealand (NZ). This first chapter provides an overview and rationale for the study and identifies the wider context. Firstly, the phenomena of team-teaching, including the historical context and definitions, are explored. Following this an introduction to secondary school ILEs in New Zealand is provided and the influences that connect open-learning spaces and collaborative teaching practices such as team-teaching are identified. An overview of school leadership is provided along with a rationale for the research study and an outline of the organisation of the thesis. This study will explore factors that influence the implementation and practice of team-teaching, and the ways school leaders might optimise these factors. It will also explore the connection between ILE spaces and pedagogical practice, which are explicitly stated as major influences on the adoption of open-plan secondary schools in New Zealand.

1.1 Team-teaching

The introduction of ILE secondary schools over the past fifteen years, along with a shift in educational philosophy and economic policy, has seen an increase in the number of schools and teachers adopting innovative pedagogies such as team-teaching (Education Review Office (ERO), 2018). Team-teaching has several benefits. Firstly, increased collaboration between teachers models real-world interactions to students, enacting the key competencies embedded within the *New Zealand National Curriculum* (Buick, 2016). Increased collaboration between teachers may also provide more opportunities to enact 21st century learning principles and enable more personalised learning for individual students, improving student achievement (Ministry of Education, 2007). Secondly, team-teaching is purported as another step in ‘de-privatizing’ teaching practice. Team-teaching can increase teacher competence by placing teachers in visible environments that enable peer-to-peer observation and reflection. This form of professional learning and development (PLD) has the potential to develop different types of teacher knowledge: curriculum, pedagogical, and relational (Rytivaara, Pulkkinen & de Bruin, 2019).

A team-teaching definition

Team-teaching, or co-teaching, has varied definitions, and is also referred to as co-operative or collaborative teaching. Team-teaching is “a coordinated instructional practice in which two or more educators simultaneously work with a heterogeneous group of students in a general education classroom” (Beninghof, 2012, p. 7). Team-teaching refers to the delivery of a single subject, or interdisciplinary teaching across learning areas (Buick, 2016). In a United States (US) context, co-teaching describes partnerships that include special education teachers working with mainstream

teachers (O'Reilly, 2016). Villa, Thousand and Nevin (2013) suggest that team-teaching involves “the distribution of responsibility among people for planning, differentiating instruction, and monitoring progress for a classroom of students” (p.4). These definitions apply to primary and secondary school contexts. Villa et al. (2013) propose that equality of partnership, shared leadership and responsibility differentiate co-teaching and team-teaching. Additionally, the simultaneous delivery of content creates an environment where students view all teachers as equally credible and knowledgeable. Team-teaching is integral to broader collaborative teaching practices that model real world interactions to students by teams of mainstream teachers equally sharing responsibility and knowledge (O'Reilly, 2016; Prain et al., 2014). Team-teaching has been selected as the preferred term for this study, as teams are groups of people with a set of complementary skills working together to achieve a goal.

Historical context

Many historical factors have influenced the implementation and practice of team teaching. Collaborative practices have not always been viewed as fundamental to teaching practice. However, post-World War Two the ways society viewed teachers and teaching evolved as a response to complex socio-political factors (Cuban, 1983). Arising from an increased focus on education, innovations such as open-plan classrooms, and attempts at team-teaching occurred globally in the late 1960s and 1970s. Little information exists on the origins of team-teaching in our local context, however George (1975) conducted a review of open spaces in the US discussing the ways ‘innovative’ team-teaching pedagogies drove the shift to open-plan classrooms in the 1960s. Latterly, Cameron and Robinson (1986), in a review of primary schools in NZ, indicated that open-plan teaching spaces continued to increase from approximately 3.5% to 10% over a ten-year period to 1985 driven by teachers electing to trial team-teaching pedagogies. Early research on the implementation and practice of team-teaching supports more recent literature, identifying several positive and negative factors that influenced teacher practice (Seyfarth & Canady, 1975; Shaw, Stratil & Reynolds, 1973). Research into noise and classroom design and its impact on practice, coupled with little evidence of an increase in student achievement was widely viewed as a reason to reinstate traditional classroom models in the early 1980s (Dovey & Fisher, 2014; Shield, Greenland & Dockrell, 2010).

The evolution of collaborative practices post-1980s

In the late 20th Century, educational discourse evolved from explicit discussions of team-teaching to that of collaborative practice and communities of practice. This shift occurred at the same time as significant shifts in socio-political and economic thinking that reflected a neoliberal paradigm that viewed education as the basis for the development of global economic capital (Bottery, 2004). Teachers had shifted to educating students in an increasingly complex world that required collaborative practices to meet the constantly changing demands of schooling and students

(Hargreaves, 2000). As workload intensified, due to increased educational reform, individual teachers embraced collaboration and consultation as a method to reduce the impact of the reforms.

Collaboration in mainstream classrooms was reliant on effective school leadership and was theorised to separate “moving” and “stuck” schools in their quest for ‘school improvement’ (Fullan & Hargreaves, 1992. p. 60). There is little information in the late 20th Century about collaborative teaching practice or team-teaching in the New Zealand context. However, Sergiovanni (2004) discusses communities of practice that emerged in the US as a result of covenantal relationships based on commitment and purpose that found a “balance between individual autonomy and collaborative work” (p. 50). These initial communities of practice were reliant on authentic collaboration between willing teacher-partners who worked together creatively to solve issues of student achievement and engagement.

The 1980s and 1990s saw intense politicization of the role of the teacher as the profession faced increasing levels of accountability. Concurrent with this, public spending on education decreased significantly in New Zealand in the late 20th Century (Adams, Openshaw & Hamer, 2005; Haque, 2014). Wylie (2011) proposed that tighter budgets and higher scrutiny required schools to utilize resources more effectively in the pursuit of increased student achievement, by improving teacher collaborative practices. Teacher collaboration was also viewed as a form of teacher professional development. The success of teacher collaboration occurred within a context of guided adult learning, as part of a school’s annual plan and the strategic deployment of both time and other resourcing towards professional development. Wylie (2011) found correlations between high levels of teacher collaboration and school processes that centered on learning. Her findings acknowledged the importance of a school-wide culture that supported individual teachers’ opportunities to develop their own collaborative practices.

1.2 Innovative Learning Environments in Aotearoa New Zealand

The introduction of ILEs in New Zealand

No new secondary schools were built in NZ in the 1980s and 1990s, however 14 new primary and secondary schools were commissioned under the Labour-led government in 2002¹. New Zealand’s Ministry of Education *Strategic Plan* (2001)² discussed a “Future Focus” and changes in education in response to “global trends in education”, encapsulated in the Knowledge Wave conference, a “three-day “group think”” to create strategies and action plans that would drive New Zealand’s economic transformation. Benade (2017a) and Smardon, Charteris and Nelson (2015) proposed that global

¹ Retrieved from https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=636701

² Retrieved from

<https://web.archive.org/web/20010504015131/http://www.minedu.govt.nz/Ministry/SBP/ourResponse.htm>

trends in education driven by the OECD, were influential to government policy in New Zealand in the late 20th Century. Gilbert (2005) mentions the impact of OECD literature on New Zealand educational policy (pp. 11 & 20). Benade (2017a), the PPTA (2010) and Smardon et al. (2015) state that many of the educational reforms post-2000 were driven by capitalist influences resulting from a global neoliberal mandate. This included both the introduction of Modern Learning Environments (MLE)/Innovative Learning Environment (ILE) school design and a shift to Public Private Partnerships (PPPs) as a method to fund them (Liu & Wilkinson, 2011; Ministry of Education, 2011; Newberry & Pallot, 2003).

The Knowledge Society and its influence on New Zealand education

Gilbert (2005), Hargreaves (2003), the OECD (2000) and others had already conceptualised a different version of schooling that would develop student learning to address issues inherent to the new century. These future issues were later described by Bolstad and Gilbert (2012) and others as *wicked problems*. Hargreaves (2003) asserted a vision of an over-extended teacher workforce, weighted by out-of-control educational reform and monitoring, tasked with changing a world where social and economic divide would characterise future societies. Hargreaves proposed that students were not adequately schooled to live and work well in a democratic environment that privileged knowledge and suggested an array of capabilities that would enable their productive involvement in the knowledge economy. Gilbert (2005) proposed a new meaning of knowledge that focused on skills-based learning in an academic context developed through “connections and relationships” (p. 154). She proposed collaboration to resolve specific, context-based problems and suggested that barriers between subjects should dissipate and transcend subject disciplines. Collectively, this reinterpretation of knowledge provided a framework for teaching in the knowledge society. This reinterpretation also provided a foundation for the emergent language of 21st century learning dispositions and New Zealand’s national curriculum (Hipkins, 2006; Keown, Parker & Tiakiwai, 2005)

The discourse of the ‘knowledge society’, in that students need to be prepared for 21st century learning, is pervasive to the ILE literature. Benade (2014, 2017a), Benade and Jackson (2017), Bisset (2014), Osborne (2016) and Patrix and Benade (2018) discuss the development of ILE spaces in New Zealand schools, exploring the influence of ‘21st century learning’ on teaching spaces to education policy in New Zealand. However, Locke (2006), foundation principal at Alfriston College, one of the first generation³ secondary ILEs built in New Zealand, cites international influences, such as Prakash Nair of *Fielding Nair*, a US based architect firm that has been influential in school design internationally, as significant in influencing the open-plan design of secondary ILE schools. These

³ ³ A first-generation ILE is an open-plan school built by the Ministry of Education after 2000. A second-generation ILE is an open-plan school built as a Public Private Partnership between the Ministry of Education and a consortium of private owners, after 2010.

schools would transform student learning. The need for increased collaboration, flexibility for groups of teachers to use different pedagogies, and space for students to engage in technology driven learning at their own pace is prevalent in the writing about school space (Degenhardt & Duigan, 2010; Fielding, 1999; Nair, 2014; Smardon et al., 2015). Consequently, the three secondary schools commissioned in 2002 were established with variations on open-plan teaching space that could enable the use of 'innovative' pedagogies such as team-teaching. These schools, first generation ILEs, incorporated variations of team-teaching into their teaching practices (Mark Osborne, formerly of Core Education, personal communication, April 2014).

1.3 School Leadership in New Zealand

New Zealand has a self-managing school system, where locally situated elected Boards of Trustees hold responsibility for the governance of a school. The Board of Trustees (BoT) has responsibility for the financial governance of the school and its facilities and are the employers of the school principal (Wylie, 2012). The principal is responsible for the management of the school, including finance, human resources and the leadership of teachers as well as the learning, achievement and welfare of the attending students. Both the BoT and the principal are responsible for ensuring that the *National Administration Guidelines* and *National Education Goals* are met. In addition to this, the principal and senior leadership team set the school's strategic plan and maintain a process of self-review to ensure equitable outcomes for all students in their care. Senior leaders are crucial to student success as pedagogical leaders who establish the school's vision for learning and achievement (Robinson, Hohepa & Lloyd, 2009).

New Zealand secondary schools operate a hierarchical leadership structure. Senior leaders work with middle managers or leaders, usually with responsibility for curriculum or the pastoral care of students. Curriculum leaders are also referred to as faculty leaders, head of department, head of faculty and head of learning area. This study will utilize head of department (HoD) as it is the most commonly used term to describe the role of a curriculum leader in New Zealand. Middle managers and leaders with responsibility for curriculum leadership are also teachers. They receive a time allowance that reduces their teaching hours by 2-4 hours per week to enable them to undertake leadership responsibilities in their curriculum area. They are responsible for the learning, progress and achievement of the students in their area along with providing administrative and curriculum support for the teachers in their care. Most HoDs are directly responsible for monitoring and leading PLD for teachers in their area, this includes appraisals of their performance as teachers. In this study, HoDs are invited to express their opinions about factors that influence their own practice, as well as factors that influence team-teacher practice for those they are leading.

1.4 Rationale for this study

Team-teaching in secondary ILEs in Aotearoa New Zealand is an emergent area of study due to the relative ‘infancy’ of ILE schools. There is a well-established body of international literature discussing factors that influence team-teaching in mainstream and special educational settings (Friend, 2007; Gallo-Fox and Scantlebury, 2016; Ghazzoul, 2018; Murata, 2002; Pratt, 2014). Some of this literature is focused on team-teaching at primary (elementary) level and there are varying interpretations of the differences between team-teaching and co-teaching. New Zealand’s adoption of open-plan teaching spaces and the speed with which they have been embedded in our national education policies has ensured that many secondary schools may soon be introducing team-teaching as a preferred form of pedagogy (Benade, 2015; Benade, 2017b). There is little recognition in the literature of the differences between team-teaching in primary and secondary schools. This difference is significant due to the number of teaching teams in which each teacher is involved, which is an area explored in this study. Additionally, the contextual and physical environment that teachers are working in presents specific challenges identified in the literature. These challenges include the increased level of interaction team-teachers experience (with other teachers and students) and the challenges of space and time. These are all factors that school leaders face when attempting to successfully implement team-teaching.

This study explores the role school leaders can play in supporting teachers of English and Social Science in their team-teaching practice. This includes a focus on the leadership of curriculum, assessment, pedagogy and the increased demands of relational interactions in team-teaching partnerships. It also seeks to add to the literature by suggesting methods school leaders can employ to reduce teacher attrition, which is an issue in secondary ILEs in New Zealand. These two curriculum areas were selected due to the specific challenges presented by team-teaching subjects that contribute significantly to the development of students’ written and critical literacies (Sandretto, 2011) in ILE spaces. Many teachers in these learning areas may be reliant on the use of specific pedagogical practices that are difficult to enact as team-teachers in ILE spaces. These practices include the use of whole and small group discussions of text, often addressing social, emotional, cultural or political topics of a sensitive nature. Additionally, both subjects rely on the use of audio-visual resources to initiate whole-group discussions, student responses and assess specific skills outlined in our national curriculum. The physical challenges presented by open-plan spaces with large numbers team-taught students may impact on teacher engagement and motivation. A lack of current research in New Zealand on the formation of secondary school teacher identity as team-teachers in ILE spaces was also found. Therefore, this research aims to address this gap and add knowledge to the field of leading team-teaching in secondary ILEs.

1.5 Organisation of Thesis

This research study is organized into six chapters. This introduction is followed by a review of the literature in Chapter Two. The literature review focuses on known factors that influence the implementation and practice of team-teaching, followed by an exploration of the literature of school leadership and the role professional learning and development can play in teacher development. The literature review also identifies gaps in the literature, specifically for empirical studies in secondary schools. The literature review questions the applicability of some of the literature to New Zealand secondary schools, but also identifies parallels that can be drawn from some studies to our New Zealand context. Three research questions are presented at the end of Chapter Two. The methodology is addressed in Chapter Three, including the instruments developed to seek teachers' opinions about factors that influence their current practice as team-teachers in secondary ILEs. The instrument also explores teachers and HoDs' opinions about factors that influence the implementation of team-teaching, along with gathering information about professional learning. The results and findings from both phases of the research are discussed in Chapter Four. A discussion of the findings, in relation to the relevant literature takes place in Chapter Five, where the research questions are answered. Finally, in Chapter Six, conclusions are drawn, and implications identified with suggestions made for the direction of future research.

Chapter Two: Literature Review

Introduction

This chapter begins by discussing innovative learning environments (ILEs) and their connection to team-teaching. The introduction to ILEs provides a contextual foundation with which to explore the literature pertaining to team-teaching and collaborative teaching practices in Aotearoa and abroad. Finally, the leadership of teacher development is reviewed and includes a discussion of the literature pertaining to school culture, the development of teacher professional identity, the role of professional life cycles and the impact of motivation and professional learning on practice. The development of teacher pedagogical, curricula and relational team-teaching practice, in secondary ILEs, is the focus of this study and is the central idea explored.

This literature review looks at a range of research on ILEs, team-teaching and the leadership of team-teachers to reflect the focus on leading team-teaching in secondary ILEs. The articles for this review were chosen to be representative of information about factors that influence team-teachers, the role of PLD and teacher change, teacher identity and career stage and school leadership, preferably within the context of secondary ILE schools. Articles focus on primary and secondary educational settings that include traditional and ILE schools, with both qualitative and quantitative research techniques employed. New Zealand governmental documents were also included. Documents included in the current study were also selected based on the date of publication (mostly within the last ten years). This ensured information was relevant and reflected current policy, practice and theory. Articles were sourced from the *Massey University Library website*, *Google Scholar* and the *New Zealand Council for Educational Research (NZCER)*. Additionally, further sources were identified from the reference lists of relevant articles and texts. Initial search terms included: innovative learning environments, modern learning environments, open-plan schools, secondary, school leadership, leading culture, teacher change, team-teaching, co-teaching, teacher identity, professional life cycle. Further articles were selected due to their frequency across several different texts as they contained important information about leading team-teaching in secondary ILEs.

2.1 Innovative Learning Environments in New Zealand

Introduction

Opportunities for pedagogic innovations, such as the development of collaborative practices and team-teaching in New Zealand schools may have been limited by physical, architectural design, if ‘form follows function’. Space is viewed by some as a lever for pedagogical change (Benade, 2015; Ministry of Education, n.d.; Nair, 2014; OECD, 2013a; Osborne, 2016), however others propose that collaborative practices can flourish in any physical environment (Smardon, Charteris & Nelson, 2015;

Wylie, 2011). Many also recognize the role open-plan teaching spaces can play in supporting teacher adoption of pedagogic innovations (Alterator & Deed, 2013; Byers, Imms & Hartnell-Young, 2018; Leander, Phillips & Taylor, 2010). Yet others question the philosophical construct of ‘space’ as more than a physical environment of bricks and mortar, but of a location in which educational acts can be theorized and conceptualized as social, emotional and political acts (Benade, 2017b; McGregor, 2003; Mulcahy, Cleveland & Aberton, 2015; Saltmarsh, Chapman, Campbell & Drew, 2015; Thomas, 2010).

Space as a lever for pedagogic change in New Zealand

Benade (2017b) states that the Ministry of Education views space as an influence on teacher pedagogical practice. Early strategy documents propose that “it is widely recognized that school environments influence student learning and teaching practice” (Ministry of Education, 2011. p. 01), although the research they provide relates specifically to the quality of the buildings, rather than the inclusion of open-space designs (Ministry of Education, 2016). The current instrument to measure school quality, the *Innovative Learning Environment Assessment Tool*⁴, draws on both the *Design Quality Indicator* (OECD, 2006) and Fielding Nair’s online tool, the *Education Facilities Effectiveness Instrument*⁵. The Ministry of Education tool predicates questions that imply intentions for teaching and learning to occur in visible, open spaces that enable collaboration. Benade (2017a) proposes that by requiring school boards of trustees to report against specific criteria, that an implicit shift in teacher practice is signalled by those that set the policy agendas and mandates that create education policy. Patrix and Benade (2018) cite the OECD (2013a) who assert that ILE spaces and collaborative teaching practices, such as team-teaching, are symbiotic and a natural accompaniment to each other. Team-teaching is cited as the “key to success in an ILE” (Patrix & Benade, 2018, p. 12), due to its ability to improve relationships and support the sharing of good practice, plus the potential to reduce workload. Some (Page, 2015; Reeves, 2018; Webb, Briscoe & Mussman, 2009) contradict this. They propose that recent changes in the global education mandate pushing the deprivatization of teaching practice, an act that places teachers in surveillant environments such as ILEs, is economically motivated.

Byers, Imms and Hartnell-Young (2018b) state that a shift from traditional classrooms to ILE spaces can “engender pedagogies that are thought to better support students to become lifelong learners capable of navigating the complexities of a technology-mediated and knowledge-based society” (p.156). They propose that ILEs afford and facilitate a range of pedagogic practices and learning experiences to enhance student learning, however they also mention the dearth of empirical evidence

⁴ <https://www.education.govt.nz/school/property-and-transport/projects-and-design/design/designing-learning-environments/>

⁵ <http://www.fieldingnair.com/wp-content/uploads/2015/05/EFEIDescription.pdf>

supporting the claims that space changes teacher practice for the better. Mulcahy (2015) suggests that school infrastructure and the shift from ‘cells and bells’ to open-plan teaching has reimaged teaching to enable greater collaboration, but that ‘space’ itself exists as complementary to practice. Alterator and Deed (2013) propose that open spaces may enable teachers to rethink teaching and learning and offer a breakaway from “institutional traditions” that constrain teacher practice (p.316). However, they state that open spaces alone do not create change but that an intentional linking of the affordances offered by such spaces can shift teachers’ thinking and practice. They cite Woolner, McCarter, Wall and Higgins (2012), proposing that a new physical space can be utilised by teachers but still fail to influence practice.

Mulcahy, Cleveland and Aberton (2015) discuss Actor-Network Theory and propose that the dichotomous either/or view of open-innovative spaces versus traditional oversimplifies the relationship of people to spaces. They discuss the presumption that the ways actors gather and perform in one type of space (innovative, flexible, open) are different to the happenings in other types of spaces (closed, traditional) and that different effects will result. Mulcahy et al. (2015) suggest that the effects can take in “identity... pedagogy... and politics” and state that “space does not have agency per se”, rather that it is affected by relations within the space, which they describe as “network making” (p.581). They close by exploring the idea that spaces that presume actions (such as assumptions of the ways the space will change teacher practice) may in fact limit the possibilities of what could occur. Saltmarsh, Chapman, Campbell and Drew (2015) propose an alternative view, suggesting that the structural realities that provide a logical order to schools (scheduling of space, timetables, curricula and other organisational rationalities) are features of educational cultures that influence teacher practice. “Spatial politics”, on the other hand, which include decisions about who, what, where and when are important aspects of “actualising space for its users” (p.320). These decisions are powerful tools in conceptualising space and have an impact on teacher practice, with a resultant effect on student outcomes. They further discuss the effect of spatial politics on school culture, and the potential conflict that arises from the negotiation between tightly constricted organisational rules and the need for flexibility from teachers as they navigate the influence space has on practice.

2.2 Factors that influence team-teaching

Collaboration and the development of specific skills, dispositions and knowledge are inherent to the recent literature of team-teaching and are viewed as positive factors influencing team-teaching. Buick (2016) proposes that interdisciplinary team-teaching may provide an approach that better prepares students to develop 21st century learning dispositions. Bolstad and Gilbert (2012) contextualize the earlier work of Degenhardt and Duignan (2010), Fullan (2007) and Gilbert (2005) promoting the development of future focused skills as essential competencies driving educational reform. Team-

teaching is viewed by Beninghof (2012), Fattig and Taylor (2008) and Villa et al. (2013) as a pedagogical approach that models collaboration and cooperation between teachers, which in turn models these dispositions to students. This notion is further developed by Gallo-Fox and Scantlebury (2016) who propose that team-teaching strengthens practice and enables greater professional development via ongoing observation and reflection. The development of specific ‘future focused’ skills and dispositions are viewed as essential for both teachers and students.

Ghazzoul (2018), in his literature review of mainstream and special education team-teaching, identifies multiple articles that support the position of Gallo-Fox and Scantlebury (2016). Ghazzoul (2018) cites Slavit, Kennedy, Lean, Nelson and Deuel (2011) suggesting that team-teaching contributes to the implementation of “student centered, innovative and collaborative environments” (p. 2131). He proposes four main advantages, identified in his review of the literature, that are acquired from the implementation of team-teaching: better environments are established within classrooms and schools; better learning opportunities for students; transformed student learning as a result of adult modeling of collaboration. Collectively these lead to a “progressed educational sector” (p. 2131).

Team-teaching both across and within subjects is purported to provide opportunities for greater choice, flexibility and deeper learning (Byers et al., 2018a), but no studies have been found that quantify this with evidenced increases in student achievement. Dr Wesley Imms, lead researcher for the Innovative Learning Environments and Teacher Change project (ILETC), the largest global research project into teacher practice in innovative learning environments, recently stated that there is currently no evidence linking student achievement and ILE spaces or pedagogies (W. Imms. Personal Communication: 11th July 2019). However, there is literature outlining the positive effects of team-teaching on teachers. Murphy, Scantlebury and Milne (2015) discuss the positive effects of team-teaching on pre-service and neophyte Science teachers, using a conceptual framework based on reflections guided by Vygotsky’s *zone of proximal development* as an effective tool to improve outcomes for teachers. There is a significant body of literature that explores the positive effects of team-teaching as a form of professional development for pre-service teachers (Cavanagh & McMaster, 2015; Crawford & Jenkins, 2018).

Beninghof (2012) and Sileo (2011) explore the dynamics of effective team-teaching relationships that can provide powerful opportunities when teachers experience ‘synergy’ in their professional relationships. Synergy, proposed by Hargreaves and Shirley (2009), the OECD (2013a) and Schein (2010) is a dynamic that exists between people in an organization that can support effective educational change, by helping to establish a healthy climate and culture. Prain et al. (2014) discuss teacher attitudes and dispositions in ILE spaces as a contributory factor to successful team-teaching. Their longitudinal study explores the process of adaptation for teachers shifting from traditional to

open-plan environments, in conjunction with a shift from traditional pedagogic practices to widespread adoption of team-teaching and digital pedagogies. Synergistic relationships between teachers is cited in much the literature as a significant factor that can support successful team-teaching if appropriate time is allocated to development and maintenance. Leadership of learning and the management of interpersonal relationships was identified by Buick (2016), Gallo-Fox and Scantlebury (2016) Ronfeldt, Farmers, McQueen and Grissom (2015) as significant to the success of team-teaching collaborations.

Beninghof (2012), Villa et al. (2013) and Prain et al. (2014) all identify disadvantageous factors that may influence team-teaching in secondary schools. Time, which can include school structures such as the timetable, and includes the grouping or blocking of students to suit the requirements of teachers is viewed as a major hurdle for school leaders to manage (Buick, 2016; Murata, 2002). Additionally, time is seen by many as a significant issue for team planning and assessing of work (Friend, 2007; Keefe & Moore, 2004; Ronfeldt et al., 2015). Sileo (2011) discusses the importance of team-teachers spending time developing their interpersonal relationships with each other, which Ghazzoul (2018) also proposes in his literature review as an essential component of developing effective teams. Benade (2018) and Finefter-Rosenbluh (2016) explore reflective practice, as a key component of teacher effectiveness. Both discuss the importance of trust in teacher-teacher and teacher-leader relationships, and the time and support it takes for impactful and trusting relationships to develop, where feedback processes achieve their intent, which may be difficult to achieve in forced team-teaching collaborations. A lack of autonomy in team formation is viewed as a threat to the successful practice of team-teaching (Buick, 2016; Prain et al., 2014).

Physical and environment factors can influence team-teaching partnerships. Space, identified in the literature as both a physical and an emotional construct, can affect team-teaching. McGregor (2003) redefines space as a relational construct that produces and connects social practices, and therefore teaching practice. Teacher interactions in school spaces, often dictated by timetables, create a constructed environment for groups and teams that they may have little control over. Additionally, teachers' sense of autonomy over their teaching space is a notable consideration for team-teaching in secondary schools. This feeling of control or autonomy can include the need for managing groups of students or teachers who experience multiple transitions between classrooms (Schoenstein, 1997), and create questions about ownership and personalization of spaces (Blackmore et al. 2011). Wild (2013), discussing 'art/teacher spaces' proposes that teacher power is diffused by an anti-democratic movement driven by neoliberal agendas that have semi-privatized teacher spaces, thereby lessening the traditional ownership teachers have over their space. This reconceptualizes teaching space as a sterile environment controlled by external forces, rather than a site of shared, relational learning.

Saltmarsh et al. (2015) explore the issues related to team-teaching in open spaces, such as noise, distraction and design. They propose that current research has focused more on addressing design issues rather than other components of teaching effectively in these spaces such as pedagogy and sustainable teaching practices. Research into noise (Amlani & Russo, 2016; Blackmore et al., 2011; Kristiansen et al., 2014; Shield et al., 2010) indicates that noise is a significant factor for teachers and students in open plan environments where team-teaching can occur. The control a teacher feels they have over different elements of their space may impact on their ability to be pedagogically adaptive within an ILE. Alterator and Deed (2013) and Byers et al. (2018b) discuss teacher uncertainty in their adaptation to using new, open spaces in teams working in ILE schools in Australia.

2.3 School Leadership of team-teaching in secondary ILEs

2.3.1 Senior Leadership

School leadership is crucial to improving outcomes for students (ERO, 2011; Robinson et al., 2009). Various forms of leadership theory have evolved over the past decades, however pedagogical leadership has been identified as four times more effective than transformational leadership, as it creates a clear educational vision and values system within a school that enables teachers to undertake the complex work of school improvement. Pedagogical leadership requires school leaders, including the principal, to actively lead and co-construct how learning is enacted within a school. It requires school leaders to carefully link and embed learning within the school's vision and philosophy. Transformative leadership relies on a relational model that inspires and motivates teachers as they engage with change. Robinson et al. (2009) propose that the value transformational leadership places on relationships supports the focus on educational purposes that pedagogical leadership requires. This focus is important for leaders of team-teaching in secondary ILE schools. The role of school leaders is clearly defined by the Ministry of Education (2008) who establish guidelines for 21st century educational leadership. School leaders work across four interconnected areas: culture, pedagogy, systems, partnerships and networks, consistently developing effective relationships to lead change and solve problems bound by their school's context. They need to demonstrate manaakitanga (respect, care and generosity) for all people, as they lead with moral purpose (Ministry of Education, 2008, p. 13).

Fullan (2007) discusses the importance of moral leadership as imperative to successful school change. He believes that both teaching and leadership have a moral purpose alongside the principles of justice and equity that should guide all leadership of schools. His ideas are supported by Duignan (2012) who proposes that morally just leadership is fundamental to all aspects of professional practice and school improvement. If a strong sense of purpose imbues leaders, then students (and teachers) can be provided with learning environments that “engage and challenge them morally, ethically and socially as well as educationally and academically” (Duignan, 2012. p. 8).

If school leaders can lead with manaakitanga, to focus their attentions primarily on quality teaching to improve student outcomes as a form of pedagogical practice that creates “caring, inclusive and cohesive learning communities”, then schools may be successful (Haque, 2014). However, Haque (2014) states that this perspective may need to evolve, “shifting the focus to the quality of the teacher” which is about a “state of mind” rather than the adoption of the “latest fad tools from researchers about what works in classrooms” (p.48). He proposes that it is teacher adaptability to a ‘teaching as inquiry’ model, where individuals are honest, open and fallible about trialing and then evaluating the impact of their practice that can help support school change, and improved outcomes for students. Fullan (2007) also supports this as a key component to effective change and innovation in schools. Change at a school level requires individuals to find the energy required to “transform the status quo”, in conjunction with the application of intellectual and moral meaning to the actions they are required to take to make change happen (p.39). Effective school leaders display specific dimensions of leadership, summarized below in Figure 1 to support teacher change and create an environment where teachers can change.

Figure 1 Robinson, Hohepa and Lloyd (2009): *The dimensions of effective leadership, together with the associated knowledge, skills and dispositions.*

2.3.2 Middle Leadership

School leaders can create a culture of professional practice to support middle leaders in their development of teachers. New Zealand middle leaders have a responsibility to lead pedagogical change and support teaching staff in a way that is responsive to student and teacher identity whilst maintaining the principles of the Treaty of Waitangi (Ministry of Education, 2012). Multiple factors can affect the success of middle leaders, such as building relational trust by leading with expertise rather than wielding positional authority; supporting vision; and establishing a team culture that supports collaboration as well as providing professional learning (MOE, 2012. p.8). Deal and Kennedy (1982), Lakomski (2001) and Schein (2010) all view culture as a tool to be used by leaders to shape beliefs, behaviours and actions by members of an organization to help reach specific goals. Culture is a set of norms, values, beliefs and assumptions that define ‘the way we do things around here’ (Caldwell & Spinks, 1991; Stoll & Fink, 1996). Leading change for teachers is complex and the manipulation and development of a specific organizational culture can be an effective way for both senior and middle leaders to provide teachers with the impetus and energy required to adopt innovations that may challenge their own personal identity and values (Fullan, 2007; Marzano, Walters & McNulty, 2005). However, those leaders who prioritise relationship building may build more effective cultures of practice.

Timperley and McNaughton (2010) propose three capabilities that are essential to building better schools: instructional, organizational and evaluative. Instructional capability requires the effective selection and use of pedagogic and instructional practices to meet the needs of students.

Organizational capability is the effective deployment of structures and systems to support teachers, this includes leadership practices. Evaluative capability is the ongoing review of all activities within a school by teachers and leaders. Integral to the successful development of these three capabilities within a school is an organization’s ability to embed effective relationships at the heart of all practice to create “managed interdependence” (p.35). Managed interdependence draws on networks of individuals to support well-planned and evaluated change. Calling on specialist expertise and creating internal relationships balanced with trust and challenge helps create a culture where teachers and leaders can be vulnerable in the face of change that might threaten their personal beliefs but still feel motivated to participate. Timperley and McNaughton (2010) propose that “achieving high trust and challenge is one of the most difficult tasks facing school improvement efforts” (p. 38). High trust and challenge are the foundations to developing relational trust (Bishop, O’Sullivan & Berryman, 2010; Day, 2011). Relational trust is characterised by:

- establishing norms of respect
- showing personal regard for staff, students and whānau
- demonstrating competence and integrity through modeling appropriate behavior

- following through when expectations are not met
- acting in ways consistent with talk
- challenging dysfunctional attitudes and behaviours. (Robinson et al., 2009)

Middle leaders are well situated within schools to work closely with senior leaders and teachers to develop the relational trust required to create a culture that prioritises dispositions that are accepting of change (Ministry of Education, 2012). Contextual factors such as time and access to appropriate professional development may make it complex to support middle leaders in this area. A shift may be required in teachers' perceptions of the role of middle leaders if there is an evolution away from curriculum and pedagogical leadership. However, creating environments that prioritise relational development will enable team-teaching to flourish.

Team-teaching in a secondary ILE requires teachers to navigate multiple relationships beyond that of a teacher in a mainstream, traditional school (Bisset, 2014; Prain et al., 2014). The development and management of multiple relationships, particularly for teachers teaching across multiple teams, is an important component of developing an effective school culture. Middle leaders, although well placed to develop relational trust between teachers and with leaders in secondary ILEs may lack the time, knowledge and skills to do so (Humber, 2017; PPTA, 2016). Findings from the PPTA *Workload Taskforce Report* (2016) found that middle leaders experience high levels of workload pressure as they combine “almost full-time teaching loads with complex and critical leadership functions” (p. 7). The report finds that the noted workload pressures also “work against the professional component of leadership roles” and that there has been no Ministry of Education review of the staffing allocation required to meet the management needs of schools, whether ILE or traditional (p.7).

Additionally, the PPTA (2017) note the lack of professional learning available to teachers and leaders. This includes both ILE pedagogies and the increased requirements for managing inter-personal relationships. Stoll and Fink (1996) propose several cultural norms: shared goals and responsibility for success; developing collegiality; attitudes to continuous learning; taking supported risks; respect and openness; and valuing each other. This comprehensive list is proposed as central to the culture of effective schools. It provides a mighty checklist for middle leaders to enact before they consider the primary part of their role: teaching their own classes, along with guiding the pedagogical and curriculum development of team-teachers. This researcher could locate no recent research that explored the leadership expectations placed on middle leaders. The increased level of expectation on middle leaders who are leading team-teaching in secondary ILEs, has several implications that could be explored in future research.

2.3.3 Team-teacher development in secondary ILEs

2.3.3.1 The formation of teacher identity in team environments

The development of teacher identity for those working in teaching-teams is an under-researched area. Teacher identity is a complex construction that can influence an individual's intrinsic motivation to achieve and persevere at a task. Team-teaching in secondary ILEs presents a pedagogical and relational shift that may challenge the values and beliefs of teachers. Saunders (2013) proposes that teachers' professional identities are a complex amalgamation of personal, professional and socio-political influences. She states that teaching is both an intellectual and emotional endeavour, seen as a vocation by many, requiring commitment and care. Buchanan (2015) proposes that professional identities are formed and reshaped over a teacher's career, with different professional and personal challenges aligning with the different lifecycles of teachers' professional careers (Day & Gu, 2007). Much of the literature argues that teachers now work in a performative system that places limits on teacher autonomy, with centralized policies and assessment practices guiding educational practice (Buchanan, 2015; Day, 2004; Reeves, 2018). This perceived lack of autonomy and self-determination, which are important concepts that underpin motivation, can negatively influence the development of teacher identity (Reeves, 2018).

Collectively, personal and professional experiences, along with external, contextual factors such as environment and socio-political forces help shape teacher identity, as posited by Mockler (2011). Understanding teacher identity, the "nuanced appreciation of what it is to 'be' a teacher" provides insight to schools, which are sites of flawed yet effective human interactions that are difficult to measure and quantify (p. 517). Mockler proposes three domains that work together to create teachers' professional identities, leading to "enhanced engagement", diagrammed below in Figure 2. It is the convergence of these domains that evolve over a career that secure teacher identity and provide a framework for teacher development and developing professional practice. Mockler furthers this notion by suggesting that the complexity of the "moral purpose" that drives many teachers' actions and practice is a fundamental aspect of their professional identity. Others (Day, 2004; Duignan, 2012; Fullan & Hargreaves, 1992; Haque, 2014) also discuss the impact of moral purpose on teacher practice and its influence on teachers' ability to rise to the challenges of modern schooling.

Mockler (2011) proposes that the convergence of personal and professional values, moral purpose and the "on the ground action" of teaching must be explicitly articulated to ensure teachers develop their own personal philosophy of education (p. 524). Once established, this positions them to engage with the socio-political forces that may be shaping conditions that challenge their beliefs, actions or practice. The development of teachers with a strong sense of professional identity may work against the neo-liberal doctrines that shape education, creating a more powerful professional workforce in which activism and social justice might flourish (Bottery, 2004). At a micro, organizational level, the

encouragement of personal philosophy and the development of professional identity may create more effective teaching teams who have a deeper understanding of the beliefs and assumptions that drive their actions.

Figure 2 Mockler (2011) *The formation and mediation of teacher professional identity*

Day and Gu (2007) propose that teacher identity and commitment to improving practice are influenced by their professional life phase. They describe three mediating influences: “the personal” (the world beyond school); “the situated” (the current school context) and “the professional” (personal philosophy, values and beliefs mediated by external socio-political forces) (Day & Gu, 2007, p. 424). These influences can affect teachers’ motivation and commitment to improving practice. They discuss the ethic of care teachers have for their students, further developing Mockler’s (2011) and others’ discussion of moral purpose, proposing the difficulty of maintaining this ‘emotional work’ over a career. They advance Mockler’s suggestions by stating that professional life phase plays a significant role in teacher identity. Different professional life phases influence teacher practice and identity in different ways, and impact on teacher commitment and motivation to engage with ongoing PLD. The findings of Day and Gu (2007) are supported by more current research. McIlveen et al. (2019) found that family/work conflict had a deleterious effect on teachers’ engagement with PLD, particularly for teachers with young families. Solutions were proposed to reduce teacher burnout and retention, which included taking family situations into account as an important contextual influence on teachers’ commitment and motivation to engage in PLD.

Much of the theory around teacher identity focuses on teachers in ‘traditional’ school contexts, in the ‘one teacher - one classroom - one group of students’ model. There is a paucity of research that conceptualises the role teacher identity plays for secondary teachers working in ILEs where the ‘emotional work’ may be greater due to the higher numbers of students each teacher must engage with each day. Additionally, the role professional life cycle plays in team-teaching situations is under-explored. New challenges to teacher identity, and therefore intrinsic motivation, arise for those team-teaching and interacting cooperatively with teachers at different stages in their careers in highly visible ILEs. Working co-operatively with other teachers can be challenging to an individual’s values and beliefs if a shared vision, or set of collective beliefs is not articulated, potentially impacting on teachers’ professional identities (Rytivaara et al., 2019; Saunders, 2013).

Page (2015) discusses this under-researched area, proposing that professional contexts where teachers are “perpetually surveilled, judged and evaluated through a variety of means” (p. 1043) are influential to teachers’ professional identities as yet another form of political control in a neo-liberal system that limits teachers’ professional autonomy. Byers et al. (2018b) counter this, proposing that the ability to work co-operatively with other teachers can positively influence teacher identity, reducing feelings of professional isolation and increasing one’s ability to observe quality teaching that will improve individual practice and the formation of aspects of their identity. Research undertaken by Deed, Lesko and Lovejoy (2014) revealed that teaching cooperatively in open learning spaces can enable a greater sense of teacher agency and expose teachers to professional development and interactions that help form their own individual identity. Rytivaara et al. (2019) suggest that the positives identified by Deed et al. (2014) are correct but require significant negotiation and time effort from team-teachers that must be properly resourced for it to be successful.

2.3.3.2 Motivation and teacher development

Motivation is identified as a factor in teacher development. Deci and Ryan (1985) define intrinsic motivation as a set of behaviours driven by internal (rather than external) rewards. Their theory proposes that intrinsic motivation functions most effectively in situations of moderate arousal and can be conceptualised by three domains: the need for competence; interest/excitement and flow; and the need for self-determination (to be free from pressure). They state people, “seek challenges that are suited to their competencies... when they find optimal challenges, people work to conquer them, and they do so persistently” (p. 32 -33). This leads to cycles of “seeking and conquering optimal challenges” for enjoyment and satisfaction (p. 33). Self-determination theory is based on issues of choice, intentionality, will and volition. They propose that a greater feeling of control one has over outcomes, along with a lack of pressure defines self-determination, that is a feeling of exhibiting ‘choice’ rather than acting from obligation or coercion. Research in the field of teacher motivation to engage in team-teaching in secondary ILEs is still emerging.

Bandura (1977, 1993) discusses self-efficacy and mastery as components of motivation. He proposes that “efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences” (1977. p. 194). He further suggests that stronger perceived self-efficacy correlates with higher effort, but that self-efficacy can be influenced by observing others, which can increase an observer’s intensity of effort. Verbal persuasion or encouragement, along with increased emotional arousal also support an increase in an individual’s persistence at a task perceived as challenging. Bandura’s later work (1993) proposes that the framing of feedback can affect one’s appraisal of their self-efficacy if it is focused on progressing personal capabilities, and “deemphasizing competitive social comparison” (p. 125). Loughland and Alonzo (2018) propose that teacher adaptation to open-spaces is a determinant of efficacy and involves a teacher’s response to change and uncertainty. Perceived autonomy support was purported as a measure of school culture and a determinant of teacher efficacy. Teachers who reported high autonomy support correlated with higher adaptability and that teacher self-efficacy predicted teacher adaptability to pedagogical change. Collie and Martin (2017) present findings showing that teacher adaptability is enhanced by increased support from school principals, improving organizational trust, motivation and engagement with their work. The support, measuring perceived levels of personal and professional support that promotes their volition and autonomy enables teachers to develop professionally.

2.3.3.3 Professional Learning and Development

In New Zealand, teachers are required to participate in professional learning and development (PLD) as a component of the professional requirements of their role (Education Council, n.d.). However, the motivation driving engagement with PLD is the desire to improve practice to positively impact on student learning. PLD, perceived by teachers as relevant, has potential to change in attitudes, beliefs or practice to transpire. Guskey, (2002), Merchie, Tuytens, Devos and Vanderlinde (2016), Richardson (1994) and Timperley (2008) all explore the process from which changes in practice, attitudes and beliefs occur. Guskey (2002) proposes a model of teacher change (Figure 3), stating that PLD efforts that try to elicit a change in attitudes and beliefs first are unlikely to cause long-term changes in teacher practice. Instead, he proposes that it is not the PLD that causes long term changes in practice, but rather the successful implementation of new initiatives. The model proposes that teacher change arises from the evidence of improvement in learning outcomes for students. He also suggests several common elements of PLD that underpin successful improvements in student outcomes: a clear focus on learning and learners, an emphasis on change, small changes and grand vision and ongoing PLD that is systematically embedded (Guskey, 2000. p. 36 – 38).

Figure 3. Guskey (2002) *A model of teacher change*.

Merchie et al. (2016) propose an extended evaluative framework (see Figure 4 below) that further develops Guskey's model in Figure 3. They believe that a more complex dynamic exists when considering the influence of PLD on teacher changes in practice that extends beyond Guskey's hierarchical model. It is the interplay between the components shown in Figure 4, along with an understanding of the contextual factors and personal characteristics relevant to the individual teacher that can effect change. Both Guskey (2002) and Merchie et al. (2016) agree that the systematic evaluation of PLD is fundamental to its success. Their thoughts on evaluation are extended by Earley and Porritt (2014) who propose a student focused approach in evaluations of PLD and its impact on changing teacher practice. Introducing 'impact evaluation' as an essential factor to any PLD activity shifts the focus away from teacher change and instead concentrates it on student outcomes. This requires the specific articulation of improvements in learning at the outset of the activity, which for most teacher PLD is the true purpose anyway. They do propose that this might be difficult to achieve as many schools struggle to identify appropriate baseline data against which to measure improvements in student learning (p. 126).

Figure 4. Merchie et al. (2016) *Teachers' professional development framework* (based on Desimone, 2009; Van Veen, Zwart and Meirink, 2012).

Team-teaching may provide opportunities for more regular inquiry into methods that work to improve student outcomes (Bradbeer, 2016; O'Reilly, 2016). PLD in New Zealand draws heavily on inquiry-based designs. These lie at the heart of effective teacher practice (ERO, 2012; Haque, 2014; Timperley, Wilson, Barrar & Fung, 2007). Richardson (1994) explores the difference between formal research and practical inquiry. She proposes that practical inquiry is more likely to lead to "immediate classroom change" (p. 5). Teacher research is purported to give voice to practitioners, privileging their practical understanding of what works. Richardson (1994) suggests that practical inquiry may provide

the foundation for formal research, but that formal research that is not context based may provide teachers with little immediate help. Guskey (2000) views inquiry as a tool to help teachers to become reflective practitioners, but also suggests that teachers must be capable of developing valid questions about their own practice. Practical inquiry into one's own practice may be the difference between effective and ineffective teachers. However, specific conditions for effective inquiry to flourish must exist. These conditions include school leadership that values and supports authentic inquiry as a means to support student progress, rather than a box-ticking exercise as part of annual review.

De Luca, Bolden and Chan (2017) and Gregory (2010) describe the impact of collaborative inquiry as a form of essential and effective PLD. Collaborative inquiry can support change when it is deliberately established and embedded within teacher practice. Gregory (2010) proposes that teacher learning on problem solving teams can be effective, however some teachers gain more from the experience than others. Career stage and motivation can impact on the gains teachers experience from collaboration. Additionally, teacher mindset and levels of optimism about involvement in collaborative groups impact on the efficacy of the PLD. De Luca et al. (2017) suggest that collaborative inquiry has evolved as an accepted practice, with claims made about its impact on student achievement and school improvement, with little research into teachers' views on its impact. Their study found that collaborative inquiry positively changed teachers' relationships and affected school culture, which included teacher confidence in taking pedagogical risks.

In contrast, both Benade (2015) and Finefter-Rosenbluh (2016) question the impact of inquiry-based practice for teachers. Benade (2015) proposes that 'teaching as inquiry' in its current form is weak, and that the inquiring practitioner must draw on a theoretical framework. Benade (2015) advances *collaborative critical teacher reflective practice* as a preferred model. He suggests that the many socio-political and cultural factors that teachers now face are better addressed with a model that requires "ongoing, regular and persistent use of reflective tools to engage individually and collectively, in critical thinking about various aspects of practice" (p. 110). Meaningful change is created by confronting the most challenging and complex issues teachers face, framed within epistemological requirements of particular skills, relevant theory-based knowledge and a practical understanding of reflection as a collaborative act. Benade (2015) recognizes the importance of grounding inquiry within a framework that supports the development of processes that support teachers. Finefter-Rosenbluh (2016) states that ill-prepared teachers engaging in critical, collaborative reflection can negatively affect professional relationships. Moral wrongs can occur as teachers experience ethical dilemmas if procedures are not correctly followed or a moral foundation is not clearly established. This can be deleterious to both students and teachers. Issues of privacy and confidentiality can abound during invasive procedures of reflective practice. Inquiry and reflection as part of team-teaching practice and PLD needs to carefully consider the points raised by Benade (2015) and Finefter-Rosenbluh (2016).

2.4 Conclusion

There is minimal literature on the leadership of English and Social Science team-teachers in secondary school ILEs in Aotearoa. The literature that relates specifically to team-teaching tends to focus on primary teachers, or secondary teachers working with special education teachers in inclusive classrooms abroad. There is a growing body of research about secondary ILEs in Aotearoa, however little of this is focused specifically on the use of team-teaching pedagogies, or the leadership of teachers' relational practices as team-teachers who are working with multiple teams.

Despite the paucity of research into secondary team-teaching in ILEs, much of the general literature on team-teaching provides a foundation for the current study. Additionally, an increased level of focus on the role of school leadership over the past decades in Aotearoa, provides another area for exploration. This could include an examination of the lived realities of middle leaders / HoDs who lead collaborative professional practice in secondary ILEs, and the challenges specific to these environments. Time, and the role professional relationships can play in supporting teacher development have previously been established as important factors in team-teaching, and are an underexplored area of research at secondary level in ILE schools in New Zealand. Effective school leadership has also been identified, as it is broadly viewed as the most significant factor influencing student achievement. There is limited research exploring the role school leaders can play in supporting the development of teacher identities as team-teachers in secondary ILEs. The development of teacher identity within ILE spaces, where there may be a need for both individual and collective identities will be explored in this study. ILE spaces, as both a conceptual and physical construct are also explored. Other factors have been identified as significantly influencing teachers' practice, including the challenges and opportunities provided through professional partnerships and the ensuing adaptation of practice that can occur from working closely with other teachers. This study seeks to investigate these areas by proposing these research questions:

Research Question 1:

What factors influence the implementation and practice of team-teaching for English and Social Science teachers in secondary innovative learning environments in Aotearoa New Zealand?

Research Question 2a:

How might senior leaders optimise factors that influence the implementation of team-teaching?

Research Question 2b:

How might middle leaders support teachers to develop their team-teaching practice?

Chapter Three: Study design and methodology

This chapter outlines the research methodology and study design. It discusses the theoretical framework used for the present study and then presents the rationale for a mixed-method design. This is followed by a discussion of the target population and sampling strategies employed, along with an overview of the processes of data collection. Ethical considerations are then considered, followed by a detailed description of the data analysis for each phase.

3.1 Theoretical Framework

Mixed method research is the process of combining and integrating both quantitative and qualitative research and data to provide better understanding of a research problem. This approach can include using multiple inquiry strategies, but also mixing diverse methodological worldviews or paradigms. Creswell (2014) describes the interaction of worldviews and the influence this philosophical orientation can have on the development of a study in the theoretical framework shown in Figure 5.

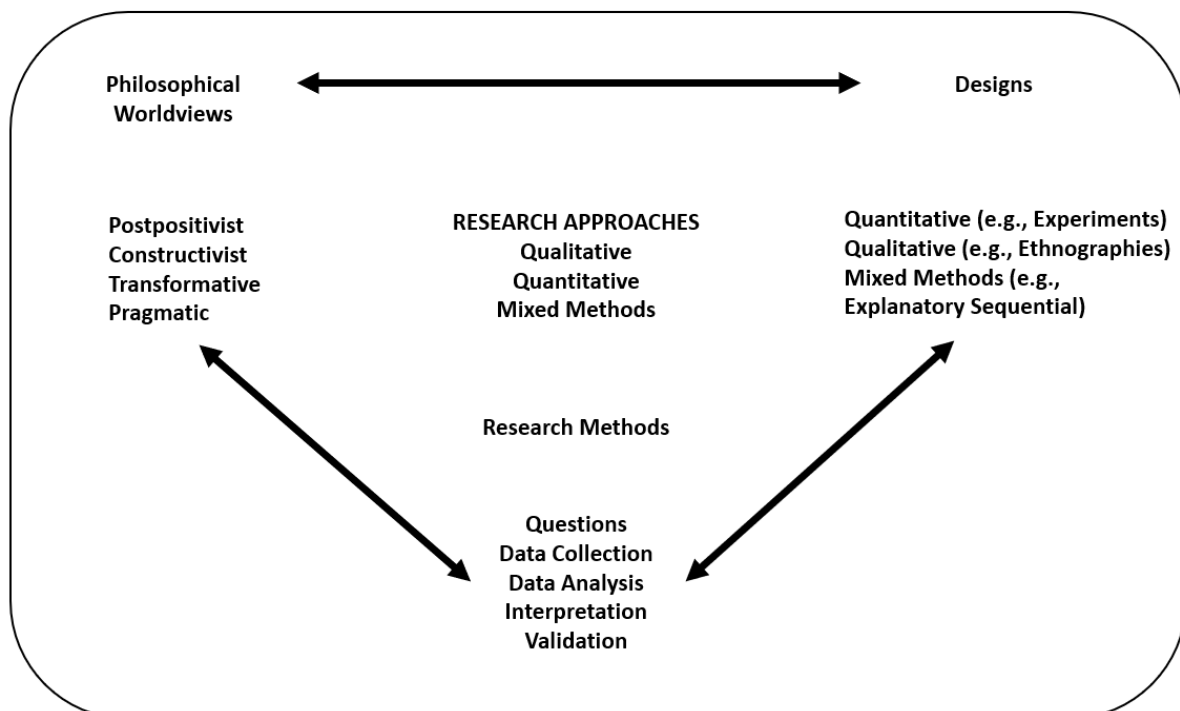


Figure 5. Creswell, 2014, p. 5. *A Framework for Research – The Interconnection of Worldviews, Design and Research Methods*.

Philosophical worldviews, paradigms and research methodologies are a “basic set of beliefs that guide action” (Guba, 1990, p. 17 cited in Creswell, 2014). Four seemingly contradictory disciplines:

postpositivism, constructivism, transformative and pragmatism may be viewed on a continuum of objective to subjective, that is 'hard', scientific data to 'soft', human-centred data. However different types of data, gathered by different methods, can be influenced by pluralistic paradigmatic views that reflect an interweaving of perspectives to further strengthen the inquiry into a research problem (Lincoln, Lynham & Guba, 2011). As a practicing secondary teacher and early career educational researcher, I can see the value in "... the superiority of 'deep, rich observational data' and the other virtues of 'hard, generalizable' data" in educational research where the two schools of positivist/post-positivist and interpretivist/constructivist paradigms seem divided (Sieber, 1973. p. 1335, cited in Johnson & Onwuegbuzie, 2004).

A pragmatic worldview was appropriate due to the nature of the topic and the research questions posed, which sought both teacher and HoD perspectives through their learned experiences to identify unknown variables. Lincoln et al. (2011) propose that arguments seeking to show contention between paradigms are less useful than probing "how and where paradigms exhibit confluence and where and how they exhibit differences, controversies, and contradictions" (p. 97). They consider the ways previously contentious research and theories may now usefully inform each other, providing a richer, fuller understanding. They recognise that scientific generalisations may not fit in answering all questions but also that post-positivists must "attempt to ask more questions... because of the unknown variables involved in research" (p. 105). Lincoln et al. (2011) state that post-positivism recognises that a correct single truth is elusive due to the many hidden variables that prevent one from absolute truth. Centring this study within a pragmatic frame enabled the different phases of the research design to complement each other, rather than delineate.

The constructivist paradigm, which does not seek absolute truths, rather the learned realities of its participants, when combined with post-positivism, may produce a richer, fuller answer to the stated research problem (Punch & Oancea, 2014). Morgan (2017) proposes that the integration of paradigms and methods, linking both purposes and procedures will produce a robust research design that draws on the strengths of the combined methods. The pragmatic approach centralises experience gained within social contexts, considering best methods to produce knowledge rather than debating the concept of knowledge itself (Teddlie & Tashakkori, 2011). In this instance, a mixed methods design, drawing on a pragmatic worldview provided insight into an under researched area in New Zealand education and established a clear direction for the primarily quantitative study that followed. Qualitative data allowed further insight and understanding of factors that influence team-teaching in ILE secondary schools.

3.1.2 Methodology

The methodology describes the theoretical framework and the entire design and plan of the study, to answer the research questions. Punch and Oancea (2014) discuss question/method fit, exploring two different approaches a) paradigm-driven and b) question-driven. They propose that “practical and professional issues and problems” may drive research and inquiry, rather than a paradigm-driven approach (p. 20). Therefore, different questions may require different methods. In this study the research questions were deliberately phrased as open-ended questions, drawing on qualitative and quantitative data, which reinforces the interaction between paradigms, methods and design, shown in Figure 3.1. A mixed methods design was selected, drawing on social constructivist and post-positivist paradigmatic influences to sit within a pragmatic frame (Johnson & Onwuegbuzie, 2004).

3.1.3 Research Questions

Research Question 1:

What factors influence the implementation and practice of team-teaching for English and Social Science teachers in secondary innovative learning environments in Aotearoa New Zealand?

Research Question 2a:

How might senior leaders optimise factors that influence the implementation of team-teaching?

Research Question 2b:

How might middle leaders support teachers to develop their team-teaching practice?

Initially, the research questions were developed drawing upon the researcher’s own experience as a teacher and Head of Department in a secondary school ILE, who has engaged in team-teaching practice and the leadership of team-teaching practice. Additionally, a review of the literature on team-teaching and secondary ILEs was undertaken to develop and refine these ideas. A single method of data collection was unlikely to provide the depth of information to answer the research questions, therefore a mixed methods approach was chosen. This design also reflected the complexity of examining an emerging topic. The scope of the research for this Masters’ Thesis was limited to gathering the views of teachers and middle leaders to inform middle and senior leaders responsible for leading team-teaching.

3.1.4 Rationale for a mixed methods approach

Mixed methods, known as the third methodological movement, raises specific philosophical questions about what influences researchers’ methodological decisions and how these can influence their inquiry decisions. Procedural questions are also raised about the strengths and limitations provided by this type of design. Creswell (2009) proposes that mixed methods is the “connection, integration, or

linking” of the two strands of quantitative and qualitative, despite the resistance of individuals who believe that the integration of two philosophical foundations (and methodological approaches) is not possible (p. 51). Johnson and Onwuegbuzie (2004) reject the traditional purist, polemic view of methodology and paradigm that places quantitative and qualitative approaches on a continuum. Their views support Creswell (2009), proposing it as the third paradigm that will bridge the “schism between quantitative and qualitative research” (p. 15). They promote methodological and epistemological dynamism to reflect the changing nature of social science research, stating that mixed methods, which combines the best of each approach, is a tool that supports more rigorous inquiry. Creswell (2009) discusses the complex interplay and influence paradigms and methodologies can have on language, suggesting that mixed methods designs may reflect the messiness that may occur when integrating two approaches, where neither should be privileged over the other.

There are many different designs that can enable a sophisticated and complex approach, depending on the type of data that needs to be gathered, and in what order, to answer the research questions (Creswell, 2014). A modified exploratory single case study was employed as part of the mixed methods design, using a small number of semi-structured, open-ended interviews to set the direction of the research, refine definitions, and develop hypotheses inductively. The case studied related to factors that influence both teachers and HoDs in the implementation and practice of team-teaching pedagogies in secondary ILEs in New Zealand, in two schools. Three HoDs and three teachers were involved in this exploratory case study that was bound by their specific school’s context and their recent experiences of team-teaching (or not) in that context (Yin, 2009).

There is discussion of the generalisability of case studies (Yin, 2009; Punch and Oancea, 2014), however in this study, the case study findings were used to inform the development of a survey tool and support the development of hypotheses to inform later analysis. A case-study was an appropriate methodological choice for the first phase of the study as it enabled an empirical inquiry into team-teaching in secondary school ILEs in New Zealand. The researcher considered context specific conditions that influenced participants’ perspectives on factors influencing their implementation or practice of team-teaching. These beliefs and perspectives which were “local and specific constructed and co-constructed realities” better informed phase two (Lincoln et al., p. 102).

A one-time, cross-sectional survey was used as the primary data gathering method in phase two for this mixed methods study. It utilised both closed and open-ended questions to elicit deeper responses to understand the perspectives of the participants. Teachers and HoDs answered the same questions for all sections, with some additional questions added for HoDs to address in Section One, shown in Appendix IV. The question weighting was unequal in that approximately 90% of the survey consisted of 60 (teacher) or 64 (HoD) Likert-type scale questions assessing attitudes and beliefs, plus nine

multi-choice demographic questions (quantitative) and 10% were open-ended questions to allow participants to write extended comments (qualitative). Analysis of the quantitative and qualitative data generated from the survey in phase two took place concurrently and was integrated to help interpret the overall results.

3.2 Target population

There are 21 secondary, area or special character schools that have first or second generation ILEs in which secondary age students are being taught. However, this study did not include area or special character schools, as these schools often use multi-level classes due to the smaller number of students in the school. Multi-level classes, where two or more year levels are studying the same subject are often combined, due to smaller student numbers, added additional complexity to the study, and were excluded. Sixteen schools fitted the inclusion criteria and were comprised of:

- 4 junior high schools years 7 – 10 (of which teachers of years 9 and 10 were invited);
- 9 high schools years 9 – 13;
- 3 senior high schools years 11 – 13.

Six agreed to participate in the study, with two of these schools agreeing to participate in phase one, summarised below in Table 1. Each Board of Trustees provided consent for research to take place, and information sheets were circulated to all relevant teachers by their Heads of Department / Curriculum Leaders.

Table 1

School participation by phase

School	Phase One: Interviews	Phase Two: Survey
School One	✓	✓
School Two	✓	✓
School Three		✓
School Four		✓
School Five		✓
School Six		✓

Additionally, the study was advertised on various digital platforms, such as Facebook and the Secondary English Mailing List. Teachers who met the criteria below were invited to participate in the survey for phase two as individuals:

- Teaching English or Social Sciences in a middle, secondary or senior high school in Aotearoa New Zealand that has an open-learning design;
- Either currently or recently team-teaching, or working in a learning area or school with others team-teaching;

Written approval was gained from the mediators of each page or group to publicise the survey and invite potential participation. The various groups who granted approval included: the New Zealand Association for the Teaching of English; the Southern Geography Teachers; the New Zealand History Teachers; Junior Social Studies Teachers NZ and NZ English Teachers. Approval was also given to post on the Secondary English Mailing List.

3.3 Sampling

Mixed methods sampling represents a blend of qualitative and quantitative strategies (Teddlie & Yu, 2007). This sampling reflects the different levels of generalisability that can be gained, which may not adhere to traditional positivist definitions.

3.3.1 Phase One: Interviews

Two schools were involved in phase one. Participants for the exploratory, single case, which used an embedded design with two units of analysis (schools), were selected as each school currently uses team-teaching, but interprets and enacts team-teaching differently. Yin (2009) states that discussion of a “purposive sample may raise... conceptual and terminological problems” that may indicate a desire for statistical generalizability (p. 42). However, across mixed methods literature purposive sampling is discussed and accepted (Teddlie & Yu, 2007). Purposive sampling is convenient and can be informative but cannot be relied upon to produce generalizable results (Ary, Jacobs, Sorensen & Walker, 2014). Therefore, this exploratory case study of six participants, from two schools was used to inform the development of hypotheses, provide clarity of definitions and indicate additional foci to be included in phase two (Morgan, 2017).

3.3.2 Phase One: Participants

The demographic data of participants in phase one are presented in Appendix VII, Table A.

The six participants involved in phase one represented both English and the Social Science learning areas and had different levels of professional experience. The three HoDs were mid-career teachers,

two of the teachers were early-career and one teacher was late-career. The views of these six participants included three HoDs and three teachers from two schools, which were sought to provide a balanced perspective of management and teaching staff, and to enable data triangulation. Due to the small sample size, and the importance of protecting the confidentiality of each participant when quoted, their interview extracts in Chapters Four and Five are identified as *HoD* or *Teacher*, with A, B, C added to indicate that a different person is being quoted.

3.3.3 Phase Two: Survey

Phase two involved participants from six schools. A non-probability, convenience sampling method was employed, as schools had the right to decline to participate. The total population of English and Social Science teachers in the six schools involved is complex to calculate as some schools require all teachers to teach all subjects, therefore subject specialisms are less quantifiable. Data gathered from the HoDs of each school indicates that approximately 80 teachers could be identified as teachers of English or Social Sciences, with 46 teachers completing the survey. Analysis of the survey indicated that seven teachers completed fewer than 70% of the questions, so their responses were removed from the final analysis. Therefore, the response rate was 49%. The total population of HoDs leading English and Social Science learning areas was 12, with a response rate of eight, or 66%.

3.3.4 Phase Two Participants

The demographic data of participants in phase two are presented in Appendix VIII, Table B.

Teaching status

Teacher participants in this study taught primarily in the English learning area, which included ESOL and Literacy (78%) and were permanently employed in their school (78%). The fixed term participants were over-represented in the questionnaire (22%) compared with the entire teaching population (9%).⁶ Seventy-five percent of fixed term teachers were early-career teachers in their first five years of teaching. Data regarding years teaching were gathered, rather than the age of participants, to provide more accurate information about teaching experience. Participants' teaching experience were quite evenly represented, with 38% teaching five years or less, 32% teaching between six and 15 years, and 30% teaching more than 16 years. This representation is comparable to the national age-group data for teachers in New Zealand (Education Counts, n.d.). This representation also aligned with data gathered by Bonne and Macdonald (2019) on professional experience. Participants were predominantly classroom teachers (71%), however a range of other roles were

⁶ See *Time Series for Teaching Staff*

<https://www.educationcounts.govt.nz/statistics/schooling/workforce/teacher-workforce>

identified, such as Dean or equivalent pastoral role (6%), Specialist Classroom Teacher (5%) and involvement in a Community of Learning (16%).

School Setting

Participants in this study taught in schools with student population between 600-1200 (73%) and 1200+ (27%). Data were gathered about school roll and current student population as some of the six schools participating were not yet at maximum roll, which is an important variable when considering how space is used in an ILE. Participants indicated that their schools were 50% full (8% of participants), 75% full (46% of participants) and 100% full (42%), and six percent did not answer.

Teachers' current teaching allocation

Nearly two-thirds of responding participants taught a mixture of senior and junior classes (62%). Team-teaching was the primary pedagogical method to deliver curriculum in four of the six participating schools, with two schools using a mix of single teacher and team-teaching. Of those classes currently being team-taught, participants were team-teaching a mixture of both senior and junior classes (46%), with 'mostly junior' as the second most common option (35%). Information on hours of work was gathered as another variable with which to group teachers. Teachers were asked to indicate hours they worked beyond the time students were required to be at school (seven hours on site per day equates to a 35-hour working week). Most participants (86%) indicated that their normal working week was greater than 42 hours, with 43% of that group indicating their total working hours were greater than 50 hours per week. Eleven percent of teachers indicated that their average working week exceeded 65 hours. Data gathered by Bonne and MacDonald (2019) indicated that 40% of teachers worked more than 50 hours per week, which is comparable to the data gathered in this questionnaire.

HoD Group

The HoD group primarily led and taught in the English learning area (67%), with 35% teaching and leading across multiple areas. Sixty-six percent of HoDs were late career stage (16 years plus) with the remaining third in their mid-career (6-15 years). A higher proportion of HoDs were permanently employed and working approximately 11-15 hours a week beyond the time students were in school, providing them with a 45-50-hour work week. The mid-career stage HoDs had contrasting levels of work, one identified themselves as working 21-25 hours additional, and the other identified a 6-10-hour additional workload. The HoD with the smaller self-identified workload worked in a smaller school (>600). The majority of HoDs (83%) were either currently team-teaching a mixture of senior and junior classes or had experience team-teaching at this level

3.4 Data collection

Data were collected over two phases, drawing on a sequential mixed methods design, summarised in Figure 6 below and explicated in the following section.

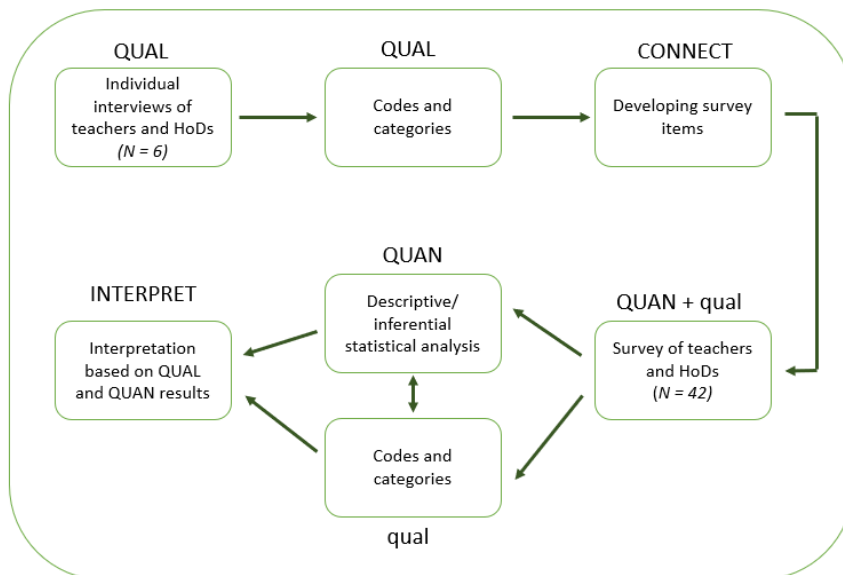


Figure 6. Ivankova & Kawamura, 2010, p. 595 (adapted) *A Sequential Mixed Methods Design with Qualitative phase Informing Quantitative.*

3.4.1 Qualitative phase one: Case Study using interviews

The qualitative phase of the design consisted of semi-structured interviews to create a case study. An interview protocol was developed to ensure consistency across all six interviews. Data were triangulated as three participants from each site were interviewed to gain their perspectives (Yin, 2009). Additionally, the interview questions were crafted to avoid leading questions that might influence the participants. Questions were succinct and were reviewed by the researcher's supervisor to ensure they were well articulated, clear and unbiased. The interview questions were also reviewed by teacher colleagues of the researcher, who were not taking part in the study, to ensure they were easily understood. The interviews were completed by *Skype*, *Facebook Messenger* or telephone, and took approximately 30 minutes. Structural Coding was used to identify codes in the first cycle. The second cycle used Axial Coding to identify themes from the interviews. *Nvivo* was used to support the analysis of the information gathered, after the interviews were transcribed and revised and the researcher had a thorough grasp of the content. Further analysis of emerging themes from the Teacher and HoD data sets led to the development of nine theories for each group, and these helped inform the development of the survey instrument (Leech & Onwuegbuzie, 2011). Additionally, this process

helped identify variables with which to measure the emerging themes, to inform the quantitative section of phase two.

3.4.2 Limitations of case studies

Yin (2009) states that three main tests should be used to ensure construct validity. Firstly, validity can be tested by ensuring multiple sources of evidence are included. In this study, construct validity was established by including interviews as a data types plus the researcher gathered data from different sources, which were the participants in contrasting schools who held different positions within their schools and were at different stages in the profession. This process ensured data were triangulated. Secondly, researchers must ensure data are coded, organised and stored in such a way that any person external to the case would be able to decipher it, as this supports validity. Thirdly, establishing a clear chain of evidence where each step of the process clearly links to the processes on either side, increases the reliability of the case study. Each of these three steps were followed as part of the case study protocol. More specifically, another limitation to be considered are the processes of data collection. Interviews are essential sources of information but can provide too much information that does not follow the correct line of inquiry. Additionally, poorly articulated or designed questions can also influence or confuse participants. Researchers need to be cognizant of their own biases and beliefs and respect the views of the participants. By using a range of questioning techniques, researcher bias may be avoided. A clear interview protocol was followed with each interview, to ensure reliability (see Appendix III).

3.4.3 Quantitative + qualitative phase two: survey

Quantitative data in a survey enable statistical tests to be undertaken, exploring a numeric description from a sample of the population, which in some instances may be used to make generalisations depending on the sampling method employed (Creswell, 2009). A survey, using non-probability, convenience sampling was chosen for this study because it enabled easy access to a range of opinions from secondary English and Social Sciences teachers in ILE schools. This cross-sectional survey collected data using an online questionnaire administered via *Qualtrics*. This method was inexpensive and fast to administer, with online surveys a familiar experience to many teachers today.

The instrument for this study was developed utilising some questions from two existing instruments. The *New Zealand School Survey* administered triennially by the NZCER (Bonne & MacDonald, 2019), included questions about teachers' beliefs about the support they were receiving for implementing and practicing technology. These questions were adapted to address team-teaching, mirroring the same structure used in the NZCER questionnaire, and were in Section One of the

questionnaire. Additionally, questions about teacher's values and beliefs that may help shape their teacher identity were also adapted for use in this instrument and were in Section Three of the questionnaire (see Appendix IV). The reliability and validity of the *New Zealand School Survey* has been established through piloting, and reference is made in the questionnaire about the adaptations in sampling strategy and question design.

An additional questionnaire was used to support the development of this instrument. The *Intrinsic Motivation Inventory* (Deci, Egharari, Patrick & Leone, 1994; Ryan, 1982) provides a series of subscales to measure intrinsic motivation, which were included in Section Two of the survey. An adapted 22 statement version was further reduced to 12 statements and covered the domains of: enjoyment, pressure, competence and autonomy which are viewed as key components of intrinsic motivation. It was reduced in length to eliminate participant fatigue when answering the survey. Several studies have utilised the *Intrinsic Motivation Inventory* in full and reduced formats for experimental studies, with their validity and reliability established (Ryan, Koestner & Deci, 1991; Tsigilis & Theodosiou, 2003). Due to the number of items across all sections, and the similarity of the scales, reverse wording was used to reduce response bias.

The exploratory qualitative case study built on the themes identified in the literature review, providing several foci for Sections One and Three of the survey. The content covered negative and positive factors that influenced both the implementation and practice of team-teaching in secondary ILEs. These factors could be broadly categorised as extrinsic factors, for example school structures and design of spaces, and intrinsic factors, such as teacher agency or motivation. A combination of factual and attitudinal questions were asked, generating both categorical and continuous data for analysis (Punch, 2003). As this study sought responses from teachers and HoDs in ILE schools who may or may not have been team-teaching, the questions were designed to be answered by both groups for Sections Two and Three, with Section One asking slightly different questions of the HoD group versus the Teacher group.

The results from the exploratory case study indicated that the initial questions for the survey in Phase Two needed further adaption, reflecting the views of the early career teachers that participated in the case study. Additional questions were added to both the Teacher and HoD questionnaire under the subscales of 'professional leadership' and 'professional relationships'. Section Three of the survey, measuring individual teachers' beliefs about team-teaching in comparison to individual teaching, was expanded to include more questions about teacher suitability and the topical issue of the current teacher shortage.

The survey was reviewed and suggestions for refinement made by the researcher's supervisor, focusing on reducing the survey length and wording of questions. The survey was piloted with one HoD and two teachers from a school that was not participating in the study. Refinements included reducing the number of questions, with some minor rewording of statements. The number of open-ended questions was reduced to seven in the Teacher survey and nine for the HoD survey, and more clarification was given in the Information Sheet that answering these open-ended questions was optional. The information about the survey was sent to six schools and the link was distributed by the HoD of Social Science and English to all teachers in those learning areas. The researcher had contacted each HoD prior to this, to introduce herself, explain the purpose of the study and answer any questions. The survey was designed to take between 15 – 20 minutes to complete and participants had fifteen days to complete it.

3.4.4 Limitations of surveys

Ary et al. (2014) propose a few limitations of the survey design as a research method. Firstly, a sample population must be identified and invited to complete the questionnaire designed as part of the survey. Ensuring an adequate response rate is a challenge presented by surveys. The design of the instrument (questionnaire) needs to accurately measure what it intends to measure and be written succinctly in language that the participants understand to ensure that the instrument is valid. Additionally, length is a consideration, in that participant fatigue can influence response rate and increase the likelihood of missing data, which can influence the reliability of the data generated. Response bias is another limitation of questionnaires; therefore the type of sampling procedure must be considered. Additionally, both Ary et al. (2014) and Creswell (2009) identify threats to validity that can occur when the respondents provide answers they think the researcher wants to hear, or fear answering truthfully if their anonymity is not assured.

3.5 Ethical Considerations

Ethical challenges are present in every stage of the research process, regardless of design, because people sit at the heart of any research design. It is essential to consider the implications of all decisions (Punch & Oancea, 2014). The researcher must consider where their own beliefs, values and opinions position them and ensure that this does not create conflict in their appraisal of ethical considerations. A low risk research application was made to Massey University Human Ethics Code (MUHEC) and the research was judged to pose minimal risk to participants (see Appendix I).

(MUHEC, 2017) provides clear guidelines for researchers involving human subjects. These include:

- participant autonomy, in that those involved can elect to withdraw at any time;

- the avoidance of harm, in that respect for persons is shown, minimising harm to all parties and showing respect for privacy and confidentiality;
- beneficence, in that there is value for individuals and that the research will add value;
- justice;
- special relationships, in that sensitivity must be shown to social and cultural factors.

3.5.1 Te Tiriti o Waitangi

Additionally, this researcher considered the ethical implications in applying the principles of the Treaty of Waitangi. These include:

- whakapapa, in that relevant consultation takes place that maintains and upholds relationships with Maori communities;
- tika, in that a consideration of the impact of the research, on Maori, must be considered;
- manākitanga, in that the dignity of all participants must be upheld;
- mana, in that the research must have significance and be of benefit.

The following processes were undertaken to ensure that the MUHEC guidelines and the principles of Te Tiriti o Waitangi were upheld. Six schools participated in this study and consent was sought from Principals, Boards of Trustees and participants, respecting any context specific differences, for example: cultural or religious factors. An information letter was sent with a consent for (Appendix II), and the researcher made herself available to answer questions. The researcher's own school was invited to participate in the quantitative section, but did not participate in the exploratory study, observing ethical issues of power and privacy. Data collection was via *Qualtrics*, and the exploratory interviews took place remotely. Data were stored according to the guidelines indicated by MUHEC and no personal information was collected in the survey for example: name, age, ethnicity or religion. Professional information was collected, for example: years teaching and professional position but no identifying information was included when these data were sought. There was little disruption to the research sites, as only a short meeting took place with staff, and no students were involved.

3.5.2 Conflict of Interest

The researcher was observant of a conflict of interest as she was employed by one of the schools that participated in the quantitative survey and previously held a leadership position in the school. Relevant staff from the researcher's school were invited to participate because the research could benefit the profession overall. Additionally, the perspectives of participants from the researcher's school were important as this is an emergent area of research and few secondary schools are currently engaging in team-teaching. However, to ensure no conflict of interest, processes were made transparent and participants from the school had autonomy to freely decide on their involvement after

receiving clear information about the project from their HoD. As with all participants, there was no pressure to be involved, as no participants were contacted directly after the initial invitation was extended. Additionally, all participants were reassured that no harm would come to them or others, from expressing their views. Therefore, interviews with staff from the two schools in Phase One were confidential and the survey was anonymous, to avoid harm and protect views.

3.6 Data Analysis

3.6.1 Coding in Phase One

Interviews were transcribed using *Nvivo* transcription and were reviewed and corrected by the researcher. The corrected transcripts were imported to *Nvivo 12* for analysis. Reference was made back to the original audio transcripts when necessary.

Phase one was exploratory in design and the interview questions were open-ended and structured to reflect the research questions (see Appendix III). Section One invited participants to discuss their teaching background and experience. Section Two explored the participant's beliefs about factors that influence team-teaching and ways these factors might be addressed by either HoDs or teachers. Because this research was based on an existing practice (team-teaching) in an under-explored context (Secondary ILEs), both deductive (based on the literature review) and inductive (analysis of interview data) processes were used (Morgan, 2017). Additionally, both Section One and Two contained questions that invited participants to provide their own definitions of, and experience with, 'ILEs' and 'team-teaching'. The data gathered for these definitions were used to develop operational terms to describe constructs that may have subjective meanings. The primary focus of the interviews was data gathering in Section Two, where the intent was to discover content that should be explored in more depth in Phase Two (Morgan, 2017). Potential hypotheses were identified for further exploration in Phase Two.

The first cycle of coding employed both simultaneous and structural coding methods. Simultaneous coding was appropriate due to the multiple meanings that could be inferred from the participants' responses to the broad questions asked (Saldana, 2009). Additionally, structural coding, which can apply a segment of content to a specific research question was appropriate to enable the development of major categories that were evident from the literature review. Data were initially grouped under open structural codes and frequency counts were examined to identify whether further sub-coding could take place to refine the initial structural codes. Within the first cycle of coding, segments that had been simultaneously coded were reassigned to ensure they were only included in one code. The language used to describe the initial codes and sub-codes drew upon the language used by the participants but also reflected ideas from the literature review.

A second cycle of coding was undertaken, using axial coding. This process enabled a winnowing down of information to create a more meaningful unit of analysis and helped identify themes within the data (Saldana, 2009). Similarly coded data were examined to identify any commonalities, and frequency counts were examined. Five participant comments were required to indicate the strength of the emerging code and to include the initial structural code for further analysis. Several patterns emerged across the data which are discussed in Chapter Four, from which themes could be identified. An example of a data analysis taxonomy is provided in Appendix V. Whilst the same pattern codes could be applied to the Teacher and HoD data sets, different themes emerged from the data sets. Analytic memos allowed conceptual fragments to be drawn together into recognizable clusters or themes (Miles, Huberman and Saldana, 2014). ‘Themeing’ can bring meaning to experience, and capture and unify information into categories that may lead to the development of higher-level theories or hypotheses (Morgan, 2017; Saldana, 2009). The themes that emerged from the second cycle of coding indicated that HoDs and teachers had different views on team-teaching that needed to be captured in Phase Two (see Figure 7).

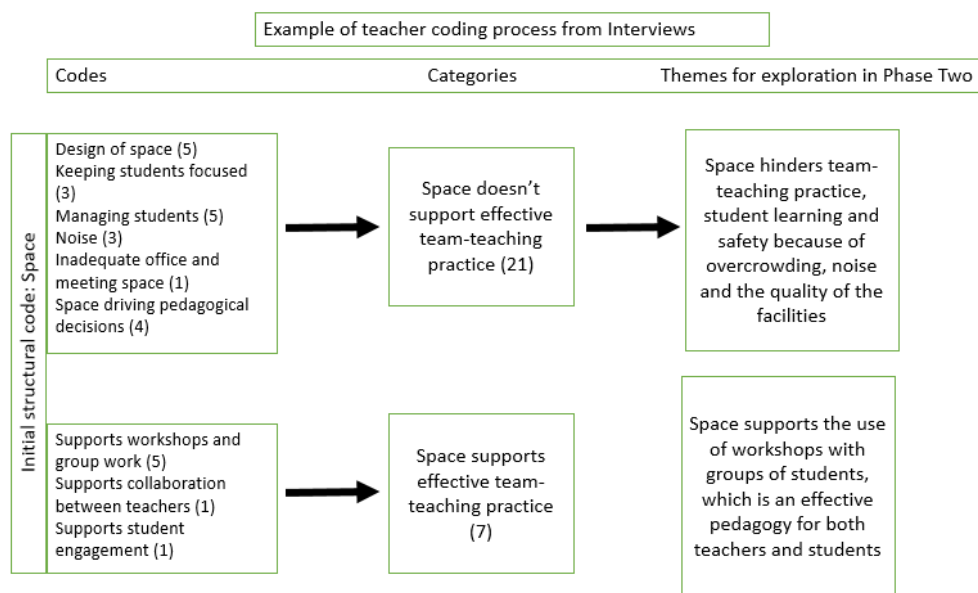


Figure 7. An example of first and second cycle coding of teacher data.

3.6.2 Phase Two data analysis

3.6.2.1 Quantitative analysis

The questionnaire data were reviewed in *Microsoft Excel* to identify any irregularities, including missing data and an analysis was undertaken to remove any data that were less than 70% completed across all sections. This left 39 useable responses from teachers out of an initial 46 responses. Any

section that was wholly incomplete was deleted. Six HoDs completed the questionnaire, and all of their responses were included. The data were then uploaded and analysed in *SPSS v25*.

Analysis of the demographic data provided insight into the participants as nominal and ordinal data were gathered. This analysis also identified groups within the teacher data set that would be used for analysis of the variables, to identify trends relating to professional lifecycle, working hours and school context. Section two was included because it measured four aspects of intrinsic motivation, gathering interval data with thirteen questions on a Likert-type scale measuring participants' beliefs about aspects of team-teaching. Although there is debate in the literature about the validity of attitudinal measurement scales and their classification as either ordinal or interval (Oppenheimer, 1999), the validity of the existing instrument used for Section Two has previously been established as interval in measurement (Ryan, Koestner and Deci, 1991; Tsigilis and Theodosiou, 2003). Descriptive statistical analysis was undertaken to explore the data, looking at measures of central tendency as some of the questions generated data that were then used as a dependent variable when analysed against questions in other sections (Field, 2009). Initially, the researcher intended to combine participant responses by data reduction, to create a subscale score for each aspect. However, as assumptions of normality were not met for some of the data, and there were missing data, the testing for internal consistency using Cronbach's Alpha was applicable to most, but not all of the data (Norman, 2010). An overview of this is provided in Chapter 4.2.

As the objectives of phase two of this study were both descriptive, in that factors were identified and described; and explanatory, in that relationships between phenomena were identified to determine potential relationships, various parametric and non-parametric statistical tests were undertaken (Onwuegbuzie & Leech, 2006). Sections One, Two and Three generated interval data through Likert type scales measuring participants' beliefs and attitudes, grouped under categories identified through the literature review and qualitative interviews in phase one. Basic statistical tests were performed to test for assumptions of normality. Descriptive statistical tests examined frequencies, mean and median scores, to identify variables that showed extreme responses that merited further examination as potential factors influencing team-teaching. Correlational statistical tests were performed, along with ANOVA or the Kruskal-Wallis H Test to determine if there were statistically significant differences between groups identified in the demographic analysis and variables from the sub-scale scores (Field, 2009).

3.6.2.2 Analysis of open-ended questions in Phase Two

Teachers were invited to respond to seven open-ended questions, and HoDs were provided with two additional questions. Similar processes were employed to the analysis and coding in phase one to

analyse participants' responses in phase two. Two cycles of coding were employed, following the same procedures for phase one, however, due to the shorter length of the responses, the analysis and coding were completed manually. Initially, deductive structural coding was completed seeking to identify concepts already identified. Inductive coding was also used as new codes emerged from the data set. The second cycle of coding reviewed the initial data, and relationships between concepts were formed to create categories. The categories were then analysed concurrent to an examination of demographic data to identify any patterns. A connection emerged between professional career stage and the frequency of comments in many categories (see Appendix VI for an example of data analysis taxonomy).

3.7 Summary

Based on the topic and research questions that guided this study, a mixed methods approach that drew on both qualitative and quantitative data was deemed to be the appropriate methodological choice. Phase one utilised a case study to hear participants' learned experiences of team-teaching in a secondary ILE. Some limitations of case studies, in the context of this research, were identified. Methods used to ensure rigour included ensuring that the interviews were semi-structured, using open-ended questions in language the participants understood to allow them to define and discuss the phenomena of team-teaching in a way that reflected their experiences of it. Additionally, data were triangulated and a methodical approach was taken to data collection and analysis (Yin, 2009). There are special considerations required when an exploratory sequential mixed methods approach is taken. Phase two employed a survey, using a questionnaire that included both closed and open-ended questions. Limitations were identified as relevant to this study and addressed in the following ways. The survey was formed using information gathered from phase one and the review of the literature to create three sections with several Likert-Type scale statements to gather participants' views. The survey was carefully checked by the researcher's supervisor and piloted with teachers currently team-teaching who were not involved in the study to ensure that instrument gathered the rich detail of the phenomena being explored. Additionally, the sample for phase one was not included in phase two to avoid undue replication (Creswell, 2014). The qualitative and quantitative data from phase two were analysed simultaneously to provide a richer interpretation of the phenomena.

4. Findings

This chapter presents the findings of the results for phase one and two of the study. Firstly, the results of the exploratory qualitative phase are summarized, exploring participants' views into factors that influence team-teaching in their individual school's contexts. The findings gathered from these interviews are then presented with an overview of the instrument developed for phase two. Finally, the findings from the concurrent analysis of the quantitative and qualitative data gathered in phase two are shared.

4.1 Phase One: Findings from Interviews

4.1.1 Coding in Phase One: Exploratory Interviews

A process of data condensing took place, using Constant Comparison Analysis with two phases of coding to make meaning from participants' perspectives on factors that influence team-teaching in their school's context. Initially, deductive Structural Coding was used, drawing on concepts already identified in the literature review. Inductive coding was also used as new codes emerged that extended beyond those identified in the literature. An iterative review of all codes enabled the reclassification of content, and a final decision on its classification was made. Visual inspection of the data, which included a graphic examination of word trees and frequencies within codes, was undertaken of the entire interview data set, along with an examination of each individual teacher or HoD's content. The use of NVivo allowed data sets to be easily combined and separated for this analysis.

The second cycle of coding reviewed the initial concepts from the literature review, and categories were developed during this Axial Coding phase. A series of steps were taken, such as physically clustering the initial data on paper along with a review of the analytic memos written throughout the first cycle, to refine and review the relationships amongst the categories. The main categories contained different concepts and beliefs that required several iterations of classification. Additionally, analysis of the Teacher and HoD data sets indicated that each group had a different focus from the other, shown in Table 2 below.

Table 2

Phase one: Categories identified through first and second cycle coding of interview data

Rank	Teacher category & frequency	Rank	HoD category & frequency
1	The impact of team-teaching on students (39)	1	Teachers' influence over their own practice of team-teaching (53)
2	The influence teachers can have over their own practice (38)	2	HoDs support of team-teaching practice (29)
3	Time (31)	3=	School leadership (24)
4	Space (27)	3=	HoDs support of the implementation of team-teaching (24)
5	Professional relationships (26)	5	Professional relationships (18)
6	HoDs support of team-teaching practice (19)	6	Time (14)
7	School leadership (16)	7	The impact of team-teaching on students (8)
8=	HoDs support of the implementation of team-teaching (15)	8=	Space (5)
8=	Workload (15)	8=	Workload (5)

The teacher comments in the top five categories were focused on the contiguity of the influences of these factors on their team-teaching. These five categories focused on the literal and substantive – the ‘daily’ factors that influenced them as practitioners. In contrast, although the HoD comments in their first category considered the specific influence of teachers on their own practice, the following categories two, and third equal (2, 3=) were focused on the role external influences, specifically the role that leaders, could play in supporting the implementation and practice of team-teaching. These categories and the emerging themes will be explicated in the next section of the chapter.

4.1.2 Teachers' beliefs about factors that influence team-teaching

The teacher data set provided insight into teachers' perspectives on implementing and practicing team-teaching as several categories emerged. The categories enabled the development of questions (variables) as the basis for the instrument developed for the survey in phase two. However, several more abstract themes and sub-themes also emerged from each category, shown below in Table 3 of which the findings are summarized in Appendix IX. Additionally, the emerging themes and sub-themes provided a structure for the analysis of data in phase two, the results of which will be presented in Section 4.2.

Table 3

Phase one: Summary of themes explicating teachers' beliefs about factors that influence team-teaching

Category & frequency	Theme	Sub-themes
Impact of team-teaching on students (39)	Teachers expressed concern about the negative impacts of team-teaching on students, but also identified positives.	<ul style="list-style-type: none"> - Team-teaching can impact negatively on students as it lessens the strength of teacher/learner relationship and some students 'slip through the cracks' - Teachers identified benefits for students associated with traditional classrooms that ILE spaces don't have; - Team-teaching provides benefits to student learning as it can increase learner agency
The influence teachers can have over their own practice (38)	Early career teachers were critical of their ability to manage the increased demands created by team-teaching. However, this was counterbalanced by their belief that team-teaching can be rewarding and enjoyable,	<ul style="list-style-type: none"> - Team-teaching can affect one's belief in their own competence as a teacher; - It is hard to be honest about the difficulties of team-teaching; - Team-teaching aligns with individual teachers' philosophy of education

	when it aligned with their philosophy about teaching.	<ul style="list-style-type: none"> - Team-teaching can be very enjoyable despite the challenges.
Time (31)	There is never enough time to do the job properly	<ul style="list-style-type: none"> - Finding time to plan co-operatively hinders effective team-teaching practice. - Managing teacher/teacher relationships is time consuming
Space (27)	Teachers have a critical view of the impact of space on their team-teaching practice and student well-being, but view it as enabling collaboration.	<ul style="list-style-type: none"> - Space hinders team-teaching practice, student learning and safety because of overcrowding, noise and quality of the facilities; - Space can enable collaboration to flourish for both students and teachers.

4.1.3 HoDs' beliefs about factors that influence team-teaching

The HoD data set provided a contrasting set of themes to that of the Teacher data set, emerging from the same categories about factors that influence team-teaching. The findings that have led to the development of themes and sub-themes, are presented below in Table 4 with a detailed clarification provided in Appendix X.

Table 4

Phase one: Summary of themes explicating HoDs' beliefs about factors that influence team-teaching

Category & Frequency	Theme	Sub-themes
The influence teachers can have over their own practice (58)	Individual attitudes and dispositions play a major role in the success of team-teaching practice	<ul style="list-style-type: none"> - Teacher adaptability to change and uncertainty can affect their practice - Teacher/teacher dynamics impact on team effectiveness - Teacher commitment, enjoyment and feelings of competence and self-worth affect team-teaching practice

		<ul style="list-style-type: none"> - Team-teaching practice requires a commitment to the philosophy
HoDs supporting the practice of team-teaching (29)	HoDs view their main contribution to effective team-teaching is supporting teachers with curriculum content because that's what teachers explicitly ask for.	<ul style="list-style-type: none"> - Support with curriculum and pedagogy is essential for team-teachers; - Teachers don't necessarily know to ask for help in managing teacher/teacher relationships
HoDs supporting the implementation of team-teaching (24)	HoDs view themselves as having little control over some aspects of implementation	<ul style="list-style-type: none"> - The timetable influences many decisions about team-teaching including team-formation, space allocation and collaborative release time - Consciously developing teams is important but challenging because of constraints on time, space and interpersonal dynamics
School Leadership (24)	HoDs view the impact of leadership practices that develop philosophy and culture as essential to effective implementation and practice, and were cognizant of the lack of PLD for teachers, but did not identify this as an impediment to effective team-teaching.	<ul style="list-style-type: none"> - The school's philosophy and culture around team-teaching is fundamental to its success; - HoDs believe that teachers do not have access to good quality PL about team-teaching in ILEs.

4.1.4 Emerging themes to explore in Phase Two

Contrasting themes emerged from each group, despite the small numbers interviewed. These themes provided a basis for the development of variables to explore in phase two, along with open-ended questions to elicit deeper responses to concepts that might be difficult to measure through a Likert-type scale. This was an important consideration due to small sample size employed for phase one. A key finding from phase one was that all three teachers identified few ways that their HoD could

influence or support the implementation, or practice, of team-teaching. The main areas identified: Impact on students; Teacher/teacher influence over practice; Time; and Space were primarily viewed as influences that were beyond the control of an individual HoD. No teacher proposed methods/solutions by the HoD to solve the issues they identified. Phase two provided an opportunity to question participants specifically about the leadership of space and time. Additionally, although all three teachers were currently team-teaching, they spoke of themselves as individuals trying to team-teach, rather than describing themselves at the heart of a group of practitioners (a team) trying to achieve a clearly established philosophy with well-articulated aims and outcomes. The HoDs did view themselves this way and were articulate about their school's team-teaching philosophy.

The distinctions that emerged between the two groups indicated a disconnect between the teacher/HoD role and their different interpretations of the role the HoD might play in supporting the implementation and practice of team-teaching. Additionally, the HoDs had a slightly different perspective of the main challenges team-teaching presented, as they tended to focus more on the personal qualities that teachers bring to their practice. The Teacher group, which consisted of two early-career teachers and one late-career teacher contrasted with the HoD group who were all mid-career. The impact of teaching experience and career stage was an important grouping variable for Phase Two.

4.2 Phase Two (Quantitative and qualitative): Survey findings

4.2.2 Quantitative findings of Phase Two

This section presents the findings from each section of the questionnaire, presented concurrent to the results from the analysis of the qualitative, open-ended questions. A summary of the main findings will be presented at the end of this section.

4.2.2.1 Section one of the questionnaire: Support teachers receive for team-teaching

Five categories were measured in section one of the questionnaire. These categories emerged from phase one and were grouped as external factors that might affect teacher motivation to engage in team-teaching. Twenty-five items measured teachers' opinions on the support they received for implementing and practicing team-teaching. A nine-point Likert-type scale was used with the five items from each category (one, strongly disagree to nine, strongly agree) to measure specific constructs that appeared influential in phase one. Participant responses to the Likert-type scale were condensed to reflect three groupings: strongly agree/agree (1 -3); neutral (4-6); disagree/strongly disagree (7-9). Each statement also offered a 'Not applicable' response. Each subscale had moderate to high reliability ($\alpha = .72 - .86$) when some items were removed due to missing data caused by a 'Not applicable' response, presented in Appendix XI, Table C.

Teacher Group findings from Section one of the questionnaire

Table 5 below shows the frequencies of teacher responses for each subscale.

Professional relationships were an important source of support for teachers. Fifty-two percent of teachers agreed that their peers provided support ($\bar{x}=6.16$, $Mo = 5.7$). Most teachers felt supported by their peers in managing student behaviour and had received helpful feedback from their HoD or teaching colleagues about their team-teaching practice. Assumptions about what good teaching looks like were also challenged by observing others. Pearson's $r = .416$, $p < .05$ indicated a moderate correlation between teachers' beliefs about the support provided through professional relationships and their motivation to team-teach, $R^2 = .17$, therefore a small effect was observed.

Most teachers (66%) indicated a neutral response to the impact of space as a support to their team-teaching practice ($\bar{x}=4.76$, $Mo=5$). Teachers were asked about the design of the space and the acoustics to support their practice (questions 1.17, 1.18, 1.19), along with questions about how much control they have over the use of the space (questions 1.16 and 1.20). There was no obvious correlation between open-plan teaching space and motivation.

The final subscale, 'time for team-teaching' indicated a strong negative trend, with 56% of respondents indicating that they disagreed that they had enough time to plan lessons, plan how to use space and work with colleagues to prepare lessons and assess students ($\bar{x}=3.39$, $Mo=1$). Thirty-three percent indicated a neutral response and there was no correlation between motivation to team-teach and time to team-teach.

Three areas emerged as notable. Firstly, 'ILE teaching space' elicited neutral responses from teachers, indicating that they felt that the space they were teaching in neither supported nor hindered their team-teaching practice. Secondly, 'Time for team-teaching' drew a negative response from teachers, indicating that time was a negative influence on their practice, in that they did not have enough time to collaboratively plan, mark and assess student work. Teachers also indicated that they felt their time was not protected from administration and meetings, to enable them to practice team-teaching effectively. Finally, 'Professional relationships' were identifiable as a positive influence on teachers' practice, in that they provided some teachers with a supportive environment for team-teaching.

Table 5

Phase two: Subscales for Section One

Item no.	Subscale	Strongly Disagree – Disagree %	Neutral %	Agree – Strongly Agree %	No response %	Total %
1.1, 1.2 & 1.4	Support from HoD or school leaders	14	44	42	-	100
1.6, 1.7, 1.8, 1.10	Professional Learning	28	47	25	-	100
1.11 – 1.14	Support from professional relationships	5	40	52	3	100
1.16 – 1.20	ILE teaching space	17	66	17	-	100
1.21, 1.24 & 1.25	Time for team-teaching	56	33	8	3	100
<i>Notes: Light grey >40%, Dark grey >50%, Dark grey and bold >60%.</i>						

The data relating to teachers' beliefs about the support they receive for implementing and practicing team-teaching was tested against the grouping variable: career stage (early, mid and late-career) using the Shapiro-Wilkes test for normality W . The Levene's test for homogeneity of variance was calculated for all five categories and did not return a statistically significant result for any category. This test indicated that the variance between career stages was equal and that an ANOVA could be performed to test for significance of variance between groups. Each ANOVA calculation returned no significant result between groups. Although there were no statistically significant findings relating to career stage in this section of the study, this may be due to the small sample size of $n=36$ and correspondingly small group sizes.

Section one: findings from items excluded from subscales

Six items were excluded from the subscales as they affected the internal consistency of the scoring. Teachers were asked in item 7.5 if they believed that their school's philosophy and vision supported and promoted team-teaching ($\bar{x}=6.8$, $Mo=9$), which indicated a strong, positive response from teachers. Pearson's $r=.520$, $p<.01$ indicated a strong, positive correlation between teacher's self-reported levels of motivation and their belief that the school's philosophy supported team-teaching, $R^2=.27$ which afforded a small effect. Teachers indicated, in response to item 1.9, that they were unable to access a helpful network of teachers from outside their school who were team-teaching ($\bar{x}=3.03$, $Mo=2$). Item 1.15 asked teachers to comment on the teacher shortage ($\bar{x}=6.27$, $Mo=9$), this result shows that responding teachers ($n=26$) agreed that the teacher shortage affects the composition of teaching teams. Ten teachers selected the 'Not Applicable' option for this statement, which may indicate that the teacher shortage only affects some schools.

Section one: findings from HoD Group

Overall, the teacher and HoD group tended to have different views on the support teachers receive for implementing and practising team-teaching, except for their beliefs about 'Time for team-teaching'. Analysis of the frequencies of responses from the HoD group ($N=6$) were completed to identify any discrepancies between the views of the teacher and HoD groups. Due to the small sample size, descriptive statistics were the most appropriate form of analysis, and sub-scales were not developed.

Teachers and HoDs held similar views about 'Time for team-teaching', where their responses tended heavily towards 'Disagreeing' that teachers had enough time to plan, mark and assess collaboratively. The HoD group indicated a more negative response for 'Professional Learning', particularly the provision of PL by their school leaders, and teachers' ability to access external help. Teachers indicated a neutral response for this category. The HoD group had a higher tendency towards agreeing that 'ILE Teaching Space' positively supported teachers, with most of their responses indicating a positive view, in contrast to the neutral responses teachers gave. The 'Leadership' data were similar across the items, however 84% of HoDs believed that they 'support teachers to team-teach' which was a higher level of agreement than teachers indicated. The HoD group indicated a neutral response to the role 'Professional Relationships' could play in supporting teachers, in contrast to teachers' more positive beliefs about this.

The HoD group answered additional questions about the support they gave and received as middle leaders, summarised in Table 6 below.

Table 6

Phase two: Section One - additional statements focusing on leadership support for HoDs

Item no.	Statement	Strongly Disagree – Disagree %	Neutral %	Agree – Strongly Agree %	No response / Not Applicable %	Total %
1.2	Senior Leaders in my school support me to lead team-teaching	-	50	50	-	100
1.10	I support my teachers to develop the knowledge and skills they need to use open-learning spaces effectively	-	34	50	16	100
1.12	I have been able to access a helpful network of middle managers/leaders outside of my school who are leading team-teaching	68	16	16	-	100
1.14	My school leaders have enabled me to develop the knowledge and skills I need to support my teachers to use open learning spaces for team-teaching	50	-	16	34	100
1.16	School or curriculum leaders give me useful feedback about my leadership of team-teaching practice	34	50	-	16	100
1.18	Teachers in my learning area give me useful feedback about my leadership of team-teaching practice	16	68	-	16	100
Notes: Light grey >40%, Dark grey >50%, Dark grey and bold >60%.						

4.2.2.2 Section one: findings from open-ended questions

Teacher Group

Eighty-nine percent of teacher participants responded to the question, ‘*What other factors make it challenging for you to implement or practice team-teaching?*’ The initial coding identified several emerging categories, grouped below by career stage. The frequency of comments relating to each category is indicated in Table 7 and comments are elaborated below.

Table 7

Phase two: Section one - summary of teacher responses to ‘What other factors make it challenging for you to implement or practice team-teaching?’

Categories	Early career <i>n</i> =14	Mid-career <i>n</i> =12	Late-career <i>n</i> =10	Total <i>n</i>=36	Example response
Time, including planning & marking supporting others & admin load including meetings	7	6	7	20	“Time is crucial” “Too many meetings on other issues” “Time. Team-teaching requires so much more consultation, communication and collaboration” “It’s time, always time and the lack of it”
Team composition, including different personalities, values & methods	8	6	2	16	“Differences of character” “I struggle when I am expected to team-teach with staff members that do not align with my core values” “Teacher personality and teaching style clashes”
Expectations from school leaders	2	6	3	11	“The expectation that we upskill ourselves in team-teaching”
The timetable	3	1	4	8	“Timetable clashes”
Teacher skill (knowledge of content)	4	2	1	7	“Lack of subject expertise”
Number of students including class size and spread of ability level	2	3	1	6	“Large class numbers” “Spread of levels of students”

Space, including capacity, noise & flexibility	-	1	3	4	“Definitely space in this school, which is over capacity”
Career stage and role	2	-	-	2	“Being a beginning teacher. Being one-year fixed term”
Autonomy to choose teams	1	1	-	2	“[Working with] a teacher who I have been forced to team-teach with”

Time challenged the teachers at all levels of experience. Comments about time focused on time for planning with team-teaching colleagues (12/20 comments). Two teachers commented on the time needed to support colleagues with subject-specific content. Three teachers mentioned the additional load caused by administrative tasks “pointless admin and meetings”. Team composition was another area that early and mid-career teachers focused on as a challenge to practicing team-teaching. The challenges included managing different personalities (7/16 comments) and teaching styles (3/16 comments), along with challenges to values because of different expectations of students (5/16 comments). Communication and forming trusting relationships within teams was another area that teachers commented on as an aspect of effective team composition.

Seventy-five percent of participants responded to the question *‘What ideas/solutions/changes might be made to address these challenges?’* Teachers identified constructive solutions that would enable them to team-teach more effectively, presented in Table 8. Teachers proposed solutions for school leaders to consider. These suggestions included creating a longer lead-in time for new courses and course development, which would enable more time for planning and help create better courses for students (10/25 comments). Teachers suggested more work by school leaders on developing a culture of trust (3/25 comments) and protecting teachers’ time from the administrative tasks associated with teaching (3/25 comments). The control of class sizes was suggested as an area in which school leaders could be more strategic (5/25 comments).

The teachers also suggested that timetable changes would provide planning time during school hours. Scheduling meetings was apparent as an issue for the early-career teachers (5/9 comments). Teachers talked about systematic methods to reduce workload, including restructuring assessments and changing school systems such as meeting schedules to allow them to focus on team-teaching. PLD could address the challenges presented by managing student learning in ILEs, which included increasing their own knowledge of team-teaching pedagogies. Early and mid-career teachers indicated that support from HoDs could improve the practice of team-teaching for them. This support included receiving more effective feedback and help with pedagogy. Again, both early and mid-career teachers indicated that team formation would support their practice, as personality and value clashes were

identified as problematic. Late career teachers did not make any comments about these two categories and had little to say about team composition in response to question one above.

Table 8

Phase two: Section one - summary of teacher responses to 'What ideas/solutions/changes might be made to address these [challenges]?'

Categories	Early career <i>n</i> =14	Mid-career <i>n</i> =12	Late-career <i>n</i> =10	Total <i>n</i> =36	Example response
School Leadership including strategic planning, protecting time, reduction of class sizes and culture	7	9	9	25	“Planning ahead” “Streaming classes” “Smaller classes” “Increasing roll” “Protect time” “Leadership that follows through”
Timetabling	5	2	2	9	“Timetabling could be better” ‘Share one block a week for planning”
Systematic changes to reduce workload	1	4	3	8	“Remove assessments (lol)” “Flexibility with assessments” “Less marking, less meetings, less emails, fewer demands and jobs/tasks to do”
Professional Learning	2	2	3	7	“PD around basic behaviour management” “Find more PD and information”
Support from HoD	3	2	-	5	“Support PRTs in planning and teaching” “Actually implement it at a department level”
Develop teams more consciously	4	1	-	5	“Two teachers who are strongly compatible”
Improve ILE space	1	1	2	4	“Walls!” “More space”
MoE recognise the increased demands of team-teaching	-	3	1	4	“Government allowing more non-contact time for schools who are engaging in integrated or team-teaching approaches”

Other, including teacher training; limit subjects taught and remove team-teaching as a pedagogy	2	-	1	3	<p>“I would recommend not having team-teaching”</p> <p>“Teach the same subject”</p>
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HoD Group

Five HoDs responded to the question *What other factors make it challenging for teachers to implement or practice team-teaching?* Three HoDs discussed the lack of teacher skill and knowledge of content and pedagogy, as a result of the “experimental nature” of team-teaching and the lack of professional learning available for those team-teaching in a secondary content (HoD 6). Three HoDs identified personality clashes as a challenge. These “makes it hard to gel” (HoD 5), particularly when teachers are “thrown together in an MLE without any professional development in either teaching in different environments, team-teaching or cross-curricula” (HoD 2). Two HoDs spoke of “overcrowding” (HoD 1) and “very large classes of 30+” (HoD 3). HoDs suggested more breakouts and bigger spaces (HoD 1). To address the issue of teacher skill, invitations were made to School Leaders to spend more time in the actual environment to understand and “see the issues for themselves” (HoD 2). HoD 3 proposed that teachers needed more time to effectively enact team-teaching. HoD 5 suggested, to counteract personality clashes, that teachers have increased agency over the development of teaching-teams. Finally, HoD 6 suggested personal development as a leader to “upskill myself by reading the literature to decide the next steps for my team”. This need to upskill was followed by an admission that the changes required seemed like a “big commitment” to an area that is “in the dark without guidance”.

4.2.2.3 Section one: summary of findings about support to implement and practice team-teaching

Teachers and HoDs identify time as the most significant challenge for team-teaching, with the quantitative data indicating a strong negative trend. Teachers feel time-poor, which impacts on their ability to meet with their team-teaching colleagues to plan, prepare, mark and assess student work collaboratively. School timetables, which support student choice, do not support teachers to work cooperatively with their colleagues, and hinder the development of effective teaching teams. The quantitative findings indicate that professional relationships are viewed as important by teachers and provide support for them to effectively practice team-teaching, as there was a positive trend in teachers’ responses to this subscale. The qualitative findings indicate that professional relationships are important for early and mid-career teachers. The qualitative findings from the HoD group also supported this.

4.2.3 Section two of the questionnaire: Teachers' and HoDs' intrinsic motivation

Several emerging themes in phase one identified motivation as a key influence to team-teaching, therefore Section two of the instrument measured teachers' and HoDs' self-rated motivational attitudes towards engaging in team-teaching. Four aspects of motivation: Enjoyment, Perceived Competence, Perceived Choice and Pressure/tension to engage in the activity, were measured with Likert-type scale questions ranging from 1 'Not at all' to 7 'Very much'. A neutral response was identified by participants selecting a 'four'. The items were presented in random order, without subheadings to indicate which aspect of motivation they were measuring. Table D, in Appendix XII summarises the descriptive statistics of the self-reported attitudes towards team-teaching for the Teacher Group. The findings from the HoD Group are presented in Appendix XIII.

4.2.3.1 Teachers' motivation to team-teach

Overall, participant responses tended towards a left, or negative, skew, indicating that they enjoyed and felt competent and relaxed about team-teaching. Questions nine and eleven had higher variability which may indicate that some teachers felt they had no choice as to whether they team-teach or not. As the data for questions nine and eleven were not normally distributed, and did not meet the assumptions required for ANOVA, further analysis using the Kruskal-Wallis test were undertaken. The test statistic H was calculated with various groups including teaching experience, hours of work, school roll and school capacity but no test returned a statistically significant result. Therefore, no conclusions could easily be drawn about the cause of the distribution of question nine and eleven, which may be due to the small sample size of each group.

Pearson's r was calculated to identify the strength of the correlation between questions one and seven (enjoyment) as a combined measure of self-reported levels of intrinsic motivation, $r = .94, p < .01$. This result indicated a high level of positive correlation between questions one and seven. Therefore, a mean score of teachers' self-rated levels of motivation was calculated from questions one and seven and used as a dependent variable for further analysis against items in other sections.

4.2.3.2 Section two: Teachers' responses to open-ended questions

Eighty-six percent of participants responded to the question "*What do you find most interesting or engaging about team-teaching?*". Codes were allocated, with categories emerging, shown in Table 9 below. The frequency of teacher comments for each category are separated by career stage.

Table 9

Phase two: Section two - summary of teacher responses to 'What do you find most interesting or engaging about team-teaching?'

Category	Early career <i>n</i> =14	Mid-career <i>n</i> =12	Late-career <i>n</i> =10	Total <i>n</i> =36	Example response
Increase competence: pedagogy	6	2	-	8	"Seeing how other teachers do things differently" "Picking up different strategies"
Increase competence: 'knowledge' of content	3	4	1	8	"Learning a new curriculum area" "Other teachers' ideas about the same topic"
Collegiality	1	4	3	8	"Spark off each other" "Bounce ideas" "Camaraderie with your team"
Collaborating & maximising others' strengths	-	3	4	7	"Working with others" "Using each other's strengths"
Feeling supported	1	2	1	4	"Supportive" "Good support systems"
Support to manage student learning and behaviour	-	1	3	4	"Easier to manage students"
Models the real world	-	2	-	2	"Life is interactive, so school should be too"

These results indicate that increasing individual knowledge and pedagogical skill, which is an aspect of teacher competence, are important to the early and mid-career teachers. Additionally, collaboration and collegiality were viewed as a positive aspect that increased teacher interest and engagement for late-career teachers. These findings indicate that factors that influence intrinsic motivation for teachers at different stages in their career may be different and could be taken into consideration by school leaders when supporting teachers.

Table 10

Phase two: Section two - summary of teacher responses to 'What do you find most challenging about team-teaching?'

Categories	Early career <i>n</i> =14	Mid-career <i>n</i> =12	Late-career <i>n</i> =10	Total <i>n</i> =36	Example response
Time to plan effective lessons	5	4	3	12	"Finding time" "Not having enough time"
Negotiating control of content	3	3	3	9	"Expectations with planning and the detail in it" "Fitting all of our content in"
Different standards about learning and behaviour	3	3	2	8	"Differing ideas about behaviour management and acceptable behaviour" "Different standards"
Managing 'personalities'	3	3	2	8	"Working with an unsuitable partner" "Inability to be flexible"
Not 'knowing' students	-	2	2	4	"Knowing my students thoroughly"
Feeling pressured	2	-	2	4	"Being the poster child for team-teaching"
Space/timetable	1	-	1	2	"The space" "The timetable"

Two themes emerged from the patterns shown above in Table 10: teachers' confidence with planning was closely linked to a desire to deliver good/great and effective lessons for their students. This desire was expressed as 'time' but could be viewed as closely linked to the impact of this time on student learning rather than an issue of workload. Additionally, another theme around 'negotiation' emerged. The theme of negotiation linked many of the patterns, where teachers indicated that the collaborative nature of team-teaching required considerable negotiation of differing values around managing students, the management of content and curriculum delivery and navigating personalities. Negotiation also extended to discussions of 'sharing space' with others, which appeared less about the specific space, but more about the need for negotiation.

4.2.3.3 Section two: HoDs' motivation to team-teach

Most HoDs either 'very much' enjoyed (68%) or were neutral (16%) about team-teaching. HoDs unanimously agreed that they "feel competent participating in team-teaching (delivering lessons)" and that they were "satisfied with their performance as a team-teacher", with 100% indicating that this sounded 'very much' like them. Other statements relating to 'Perceived Competence' had less agreement with thirty-two percent indicating a neutral response and sixty-eight percent indicating a positive response to planning lessons. Generally, the HoD Group were not tense (68%), or anxious about team-teaching (84%). Most HoDs felt they had control over subject content and delivery when team-teaching (84%). Fifty-percent of HoDs responded 'Not at all' to two statements measuring pressure and perceived choice, "I don't feel like I have to team-teach" and "There's no pressure for me to team-teach if I don't want to". One responder (16%) selected a neutral response, and two proposed that they 'very much' did not have to (34%). These statements also elicited a wider range of responses for the Teacher group, highlighting an area for further exploration as it appears some teachers and HoDs do feel pressure to engage in team-teaching which can influence an individual's motivation to engage in, and persevere at a task. Responses to the open-ended questions: '*What do you find most interesting or engaging about team-teaching?*' and '*What do you find most challenging about team-teaching?*' elicited very similar responses to that of the teachers.

4.2.3.3 Summary of Section two

Overall, teachers enjoyed team-teaching and saw many benefits to their individual practice. Most viewed themselves as competent team-teachers. The benefits that teachers experience appear to differ according to their career stage, indicated by participant responses to the open-ended questions. Time was identified as a consistent challenge to team-teaching, experienced by teachers across all stages of their career and a potential factor that influences their motivation to engage in team-teaching. Overall, most of the HoD group enjoyed team-teaching, and they all felt competent at team-teaching. In some areas HoDs felt they exhibited a lot of control, but some still felt pressured to team-teach. The pressure may be due to the school's context. Pressure/tension is a negative predictor of intrinsic motivation, therefore this is an area that needs further consideration, as both the Teacher and HoD Group indicated feeling pressured, which may affect motivation over the long term.

4.2.4 Section Three of the questionnaire: Teachers' and HoDs' beliefs about team-teaching compared to teaching as an individual

Section three of the questionnaire explored teachers' and HoDs' views about team-teaching compared to teaching as an individual. Each variable measured an aspect of teacher identity, drawing on the themes that emerged in the interviews for phase one. The third section consisted of 23 Likert-type

scale items, with teachers and HoDs asked to rank their agreement about their beliefs about team-teaching compared to teaching as an individual, on a scale of one: Strongly Disagree to nine: Strongly Agree. The responses were analysed categorising scores one, two and three as ‘Negative’ or ‘Disagree’, scores four, five and six as ‘Neutral’, and scores seven, eight and nine as ‘Positive’ or ‘Agree’. The distribution of the data were tested by the Shapiro-Wilkes test, and homogeneity of variance through the Levene’s test. Both tests returned results indicating that the data were not normally distributed nor homogenous, therefore testing across groups utilised the non-parametric Kruskal-Wallis *H* test. Most of the data presented reflects the findings from the Teacher group, with the HoD groups’ results discussed immediately below.

4.2.4.1 The direct impact of team-teaching on students

The impact of team-teaching on student learning, achievement and wellbeing emerged as a category in phase one and is explored in this section.

Table 11

Phase two: Section three - Teachers’ beliefs about the direct impact of team-teaching on students

No.	Questionnaire item	Strongly Disagree – Disagree %	Neutral %	Agree – Strongly Agree %	No response or Not Applicable %	Total %
3.1	It provides deeper coverage of topics and content for students	14	39	47	-	100
3.8	It is easier to assess student learning	28	50	17	5	100
3.10	NCEA complicates team-teaching	20	20	50	10	100
3.12	Students have more access to the help they need to improve	14	44	42	-	100
3.15	For the majority of my students, it is better for their wellbeing (welfare)	14	53	31	2	100
3.16	It provides my students with better opportunities to learn and achieve	11	39	50	-	100

3.18	It provides greater choice for students	3	42	53	2	100
Notes: Light grey >40%, Dark grey >50%, Dark grey and bold >60%.						

These results indicate that teachers can see benefits that team-teaching provides for students, which include deeper coverage of curriculum content, the potential for more help or support, and that it may provide more choice and better opportunities to learn and achieve. The two items about assessment, 3.8 ($\bar{x} = 4.62$, $Mo = 5$) and 3.10 ($\bar{x} = 6.03$, $Mo = 8$) indicated that participants believed that assessment was more complex in team-teaching situations. Teachers' beliefs about student wellbeing ($\bar{x} = 5.51$, $Mo = 5$) indicated neutrality, with a slightly higher proportion (31%) agreeing that it was better, shown in Figure 8 below.

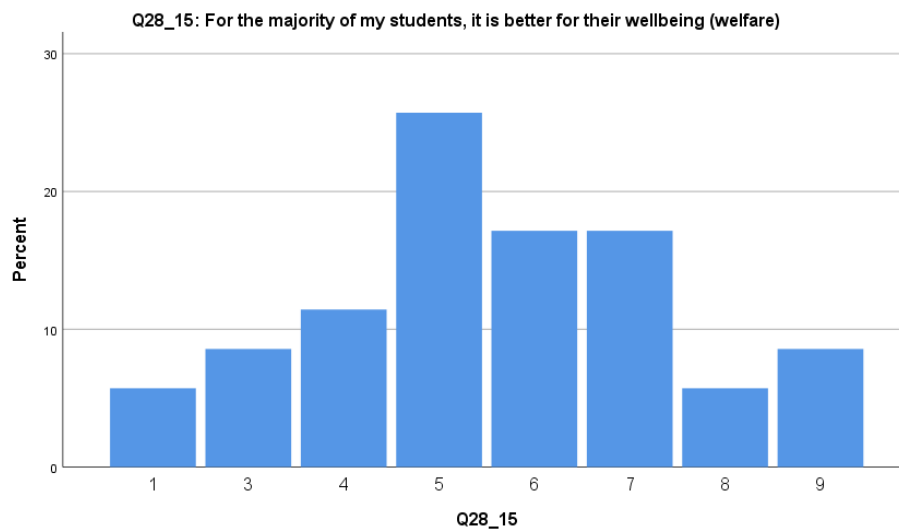


Figure 8. Teacher's beliefs about the impact of team-teaching on student wellbeing

The data relating to the impact of team-teaching on students was tested against the grouping variable: career stage (early, mid and late-career). The Kruskal-Wallis H test was determined to be the best test to conduct on each of the questions to identify if there were differences between groups. No significant differences were identified relating to career stage.

The Pearson product-moment correlation coefficient (r) was calculated to measure the relationship between teachers' self-rated levels of motivation and the seven questions in Table 11. The results are shown below in Table 12. There was a significant relationship between teachers' self-rated levels of motivation and some of their beliefs about the impact of team-teaching on students. This indicates that school leaders could consider the impact student learning, assessment and wellbeing has on teachers' motivation to team-teach.

Table 12

Phase two: Section three - Pearson correlation results: Intrinsic motivation and teachers' beliefs about the impact of team-teaching on students

No.	Questionnaire item	Motivation
3.1	It provides deeper coverage of topics and content for students	$r=.55^{**}$
3.8	It is easier to assess student learning	$r=.381^*$
3.10	NCEA complicates team-teaching	$r=.206$ Ns
3.12	Students have more access to the help they need to improve	$r=.382^*$
3.15	For the majority of my students, it is better for their wellbeing (welfare)	$r=.615^{**}$
3.16	It provides my students with better opportunities to learn and achieve	$r=.538^{**}$
3.18	It provides greater choice for students	$r=.286$ Ns
Notes: Ns = not significant ($p=.05$), $*p < .05$, $**p < .01$.		

Overall, the results for the HoD Group, shown in Appendix X mirror the results for the Teacher Group. One exception, statement 3.8 had a stronger 'disagree' response, with 50% of HoDs stating that they disagreed that "it is easier to assess student learning", again reiterating this as an area of focus.

4.2.4.2 Section three: The influence teachers can have over their own practice

Three components of teacher identity were explored through the following items: personal philosophy, professional life stage and teacher attitudes and dispositions. The findings about these areas are discussed below. Two other components of teacher identity are also explored: professional relationships and school context.

Table 13

Phase two: Section three - Teachers' beliefs about aspects of teacher identity when team-teaching

No.	Item	Strongly Disagree – Disagree %	Neutral %	Agree – Strongly Agree %	No response %	Total %
3.2	It allows me to be the kind of teacher I want to be	19	36	39	6	100
3.3	I am satisfied with how much control I have over what and how I teach	19	47	31	3	100
3.5	It aligns better with my personal values and beliefs about teaching	11	33	53	3	100
3.6	It is less work to team-teach	47	31	14	8	100
3.7	It makes me feel vulnerable because I am being observed while I teach	56	14	19	11	100
3.11	My personal commitments outside of school make it more challenging	36	25	22	17	100
3.17	It requires particular competencies that some teachers don't have	3	33	64	-	100
3.19	If a teacher isn't committed to the philosophy, it affects everyone	8	11	81	-	100
3.22	Individual attitudes play a role in making it successful	-	-	100	-	100
<i>Notes: Light grey >40%, Dark grey >50%, Dark grey and bold >60%.</i>						

Personal philosophy of education

The teachers' personal philosophy of education was measured when asked to compare team-teaching to teaching as an individual. Items 3.2 "*It allows me to be the kind of teacher I want to be*" ($\bar{x}=5.35$, $M_o=7$) and 3.5 "*It aligns better with my personal values about teaching*" ($\bar{x}=6.23$, $M_o=7$) compared team-teaching with individual teaching. Most teachers were neutral or agreed that team-teaching

aligned somewhat with their personal beliefs about teaching. Teachers' beliefs about their personal philosophy of education did not appear to be significantly affected by career stage, item 3.2 $H(2) = 2.61, p > n.s$ and item 3.5 $H(2) = 5.16, p > n.s$. There was a strong, positive correlation between teachers' motivation and their beliefs about their personal philosophy of education. Item 3.2 $r = .561, p < .01$, with a small effect $R^2 = .31$ and item 3.5 $r = .613, p < .01$, also with a small effect $R^2 = .38$.

Professional Life Stage

The influence of aspects of professional career stage were explored through items 3.3, 3.6, 3.7 and 3.11. Teachers indicated a neutral response to the amount of control they have over what and how they teach in item 3.3, comparing team-teaching to individual teaching. There was a strong, positive correlation between this item and teachers' motivation to team-teach $r = .541, p < .01$, with a small effect $R^2 = .30$. Items 3.6 and 3.11 asked teachers about aspects of workload, comparing team-teaching to teaching as an individual teacher. Teachers indicated a negative response to this, with 47% indicating that it was more work to team-teach. There was a negative correlation between teachers' motivation to teach and item 3.11 $r = -.585, p < .01$, also with a small effect $R^2 = .34$. For item 3.7, teachers were asked whether they were vulnerable being observed while team-teaching, which elicited a negative response (56%), also with a negative correlation $r = -.502, p < .01$, with a small effect $R^2 = .25$. Career stage did not influence results for items 3.3, 3.6 and 3.11, however, item 3.7 $H(2) = 11.78, p < .01$ revealed a difference in means for the mid-career group.

Teacher dispositions and attitudes

Items 3.17, 3.19 and 3.22 measured teachers' beliefs about the role individual attitudes and dispositions play in team-teaching versus teaching as an individual, shown below in Figures 9 to 11. Each of the three items had a positive response from teachers, particularly item 3.22. Due to the obvious negative skew in all three items, no correlations could be made against teacher motivation to engage in team-teaching, and there were no observable trends resulting from career stage.

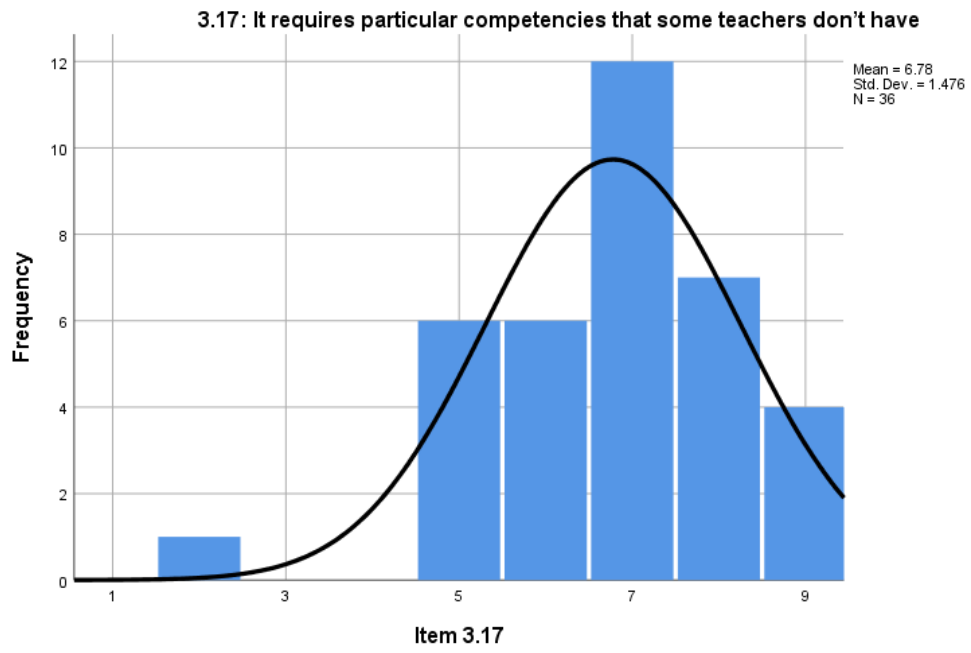


Figure 9. *Teacher competencies*

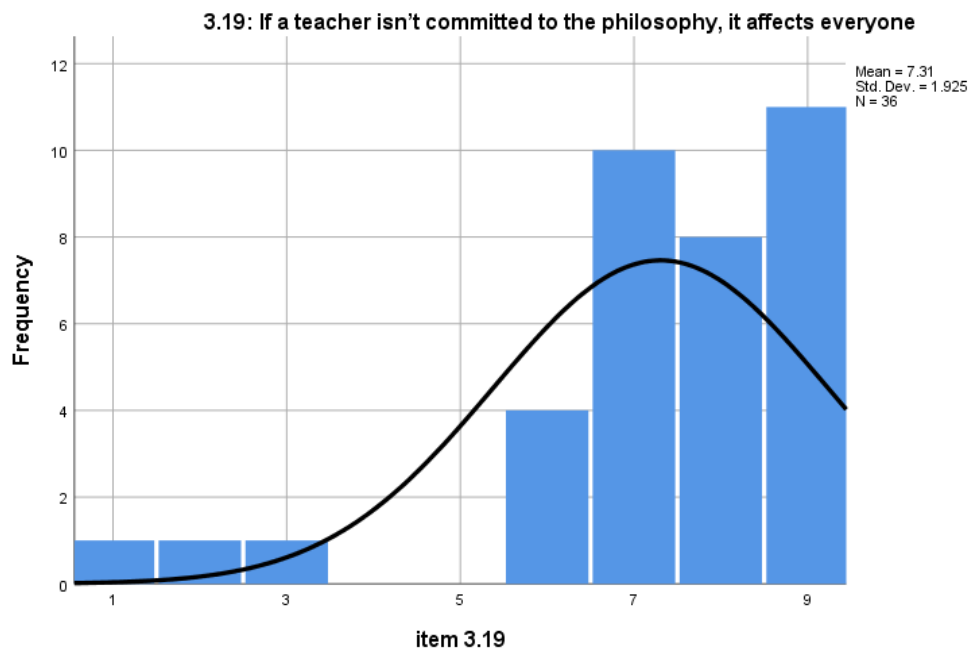


Figure 10. *Teacher commitment*

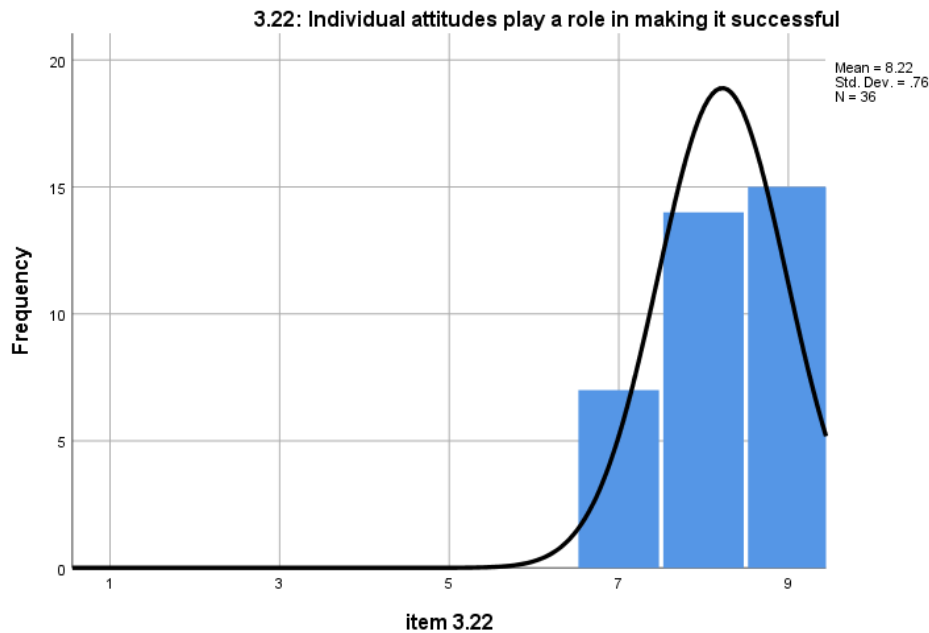


Figure 11. *Teacher attitudes*

The HoD Group expressed similar beliefs to that of the Teacher Group. However, 50% indicated a neutral response to Item 3.2” It allows me to be the kind of teacher I want to be”, which was higher than the Teacher Group. The HoDs also had a broader spread of results to Item 3.5 “It aligns better with my personal values and beliefs about teaching” with 66% indicating a negative or neutral response to this statement. Together, these results may indicate that team-teaching aligns less with the HoD Groups’ personal philosophy of education. At the same time, HoDs felt less vulnerable (84%) and their outside commitments did not make team-teaching more challenging (68%). These results may be a result of career stage (66% of the HoD Group were late career teachers). When discussing Teacher Dispositions and Competencies, the HoD group’s responses were varied. Eighty-four percent of HoDs agreed with Item 3.17 “It requires particular competencies that some teachers don’t have”, compared with sixty-four percent of teachers. However, Item 3.19 “If a teacher isn’t committed to the philosophy, it affects everyone” had a lower response of 66% agreeing, compared with 81% of teachers. Correspondingly, Item 3.22 “Individual attitudes play a role in making it successful” had only 84% of HoDs agreeing, compared with 100% of teachers.

Professional relationships

Table 14

Phase two: Section three - Teachers' beliefs about professional relationships when team-teaching

No.	Questionnaire item	Strongly Disagree – Disagree %	Neutral %	Agree – Strongly Agree %	No response or Not Applicable %	Total %
3.4	Relationships with team-teaching colleagues are more collegial	6	35	56	3	100
3.13	When I have synergy with a colleague it makes team-teaching easy	3	11	86	-	100
3.14	I have to put more effort into relationships with my colleagues but it is worth it	11	25	56	8	100

Notes: Light grey >40%, Dark grey >50%, Dark grey and bold >60%.

Teachers were positive about relationships with colleagues when team-teaching, displayed above by the frequencies in Table 14. Item 3.13 ‘*When I have synergy with a colleague it makes team-teaching easy*’ revealed a strong negative skew, $\bar{x}=7.6$, $Mo=9$. This indicates a potential area for teachers and school leaders to focus on to improve teaching teams. All three items correlated with teachers’ motivation to engage in team-teaching:

Item 3.4 $r=.627$, $p<.01$, with a small effect $R^2=.39$

Item 3.13 $r=.673$, $p<.01$, with a small effect $R^2=.42$.

Item 3.14 $r=.542$, $p<.01$, with a small effect $R^2=.34$.

This reinforces the importance of professional relationships in supporting the successful implementation and practice of team-teaching. There was no observable relationship between career stage and beliefs about professional relationships when the test statistic H was calculated. This finding was supported by the qualitative data in Sections one and two, both of which addressed various aspects of the role professional relationships can play in successful team-teaching practice. The findings from the HoD Group’s responses to the statements in section three of the questionnaire reflected similar beliefs to that of the teachers.

School context

Four questions were included to measure teachers’ beliefs about the influence of school context on team-teaching, indicated on Table 15 below. School context is an important component of teacher identity and can influence teachers’ beliefs and attitudes. The teachers agreed that team-teaching was supported by senior leaders and that the philosophy aligned with the school’s beliefs about learning, mirroring the findings in section one of the questionnaire. Three of the four items correlated with teachers’ motivation to engage in team-teaching:

Item 3.9 $r=.579$, $p<.01$, with a small effect $R^2=.34$

Item 3.20 $r=.458$, $p<.01$, with a small effect $R^2=.21$

Item 3.21 $r=-.230$, $p>ns$

Item 3.23 $r=.514$, $p<.01$, with a small effect $R^2=.26$

Table 15
Phase two: Section three - Teachers’ beliefs about school context

No.	Questionnaire item	Strongly Disagree – Disagree %	Neutral %	Agree – Strongly Agree %	No response or Not Applicable %	Total %
3.9	It is the best way to teach because of my school’s context	20	32	42	6	100
3.20	It is supported by my school leaders	11	17	64	8	100
3.21	The teacher shortage makes it harder	20	25	36	19	100
3.23	It aligns with my school’s beliefs about learning	3	25	66	6	100
<i>Notes: Light grey >40%, Dark grey >50%, Dark grey and bold >60%.</i>						

The results for the HoDs contrasted with those of the Teachers. Fifty-percent of HoDs disagreed with Item 3.9. Additionally, Item 3.20 had a broader spread, with a 33% representation of disagree, neutral and agree, this contrasted with teachers’ beliefs that team-teaching was supported by school leaders

(64%). Both groups were aligned for Item 3.21, however, fewer HoDs agreed with Item 3.23 (34%). Due to role and the position of HoDs within the school hierarchy, HoDs often have greater insight into the decisions made by school leaders, which could account for the difference in responses to the statements about school context.

4.2.4.3 Summary of Section three

The teachers believed that team-teaching could benefit student learning, particularly as it may provide students with more choice. However, many teachers were less agreeable about the impact of team-teaching on student wellbeing and assessment. The HoDs results reflected similar beliefs. Many teachers felt somewhat that team-teaching aligned with their personal philosophy of teaching, although collectively, the statements measuring aspects of teacher identity such as personal philosophy, professional life cycle and teacher dispositions and attitudes presented varied views and perspectives. Teachers were, however, clearly united in their responses to the statements about the impact of others' dispositions on team-teaching practice (see Figures 4.2-4.4). There was a clear trend presenting teachers' beliefs that commitment to the philosophy of team-teaching and an individual's attitudes to team-teaching play a significant role in the success of team-teaching. This finding contrasted with the views of the HoDs. Contextual factors such as the teacher shortage indicated that selecting teachers who are committed to ILEs and team-teaching may be an important factor to consider.

The teachers identified professional relationships as an area that was different for them as team-teachers, versus teaching as individuals. There was a significant correlation between teachers' beliefs about professional relationships and their motivation to team-teach. Most teachers believed that 'synergy' with colleagues increased their enjoyment of team-teaching. Focusing on strengthening and developing teachers' professional relationships may support more effective team-teaching practice. Additionally, statements about school context indicate that teachers see an alignment between team-teaching being right for their school's context, and their motivation to team-teach.

4.2.5 Professional Support for HoDs and Teachers

The Teachers and HoDs answered open-ended questions about the professional support they would like to receive and their general views on team-teaching were garnered. The findings from these questions, along with the results from the multi-choice suggestions for Professional Learning are explored in this section.

The Teacher Group was asked “*What would you like your HoD / Curriculum Leader to do more or less of?*” Forty-four percent of teachers responded with suggestions and 5% responded with positive statements about their HoD. Respondents picked up on the wording of the question, and many included the word ‘more’ in their answers, which hints at initiatives in place that require more time and focus to make teachers feel supported. The results in Table 16 below reveal that teachers want access to professional learning to support their team-teaching practice. Time emerges as a theme, with three categories: finding time to mark and plan, using meeting times effectively and protecting teachers’ time is important to teachers, and something that they see their HoD having control over. The responding teachers want the HoD to model collaborative practices, as five comments were made about using professional sharing to increase their skill as team-teachers. A few viewed it as important that the HoD was personally modelling team-teaching.

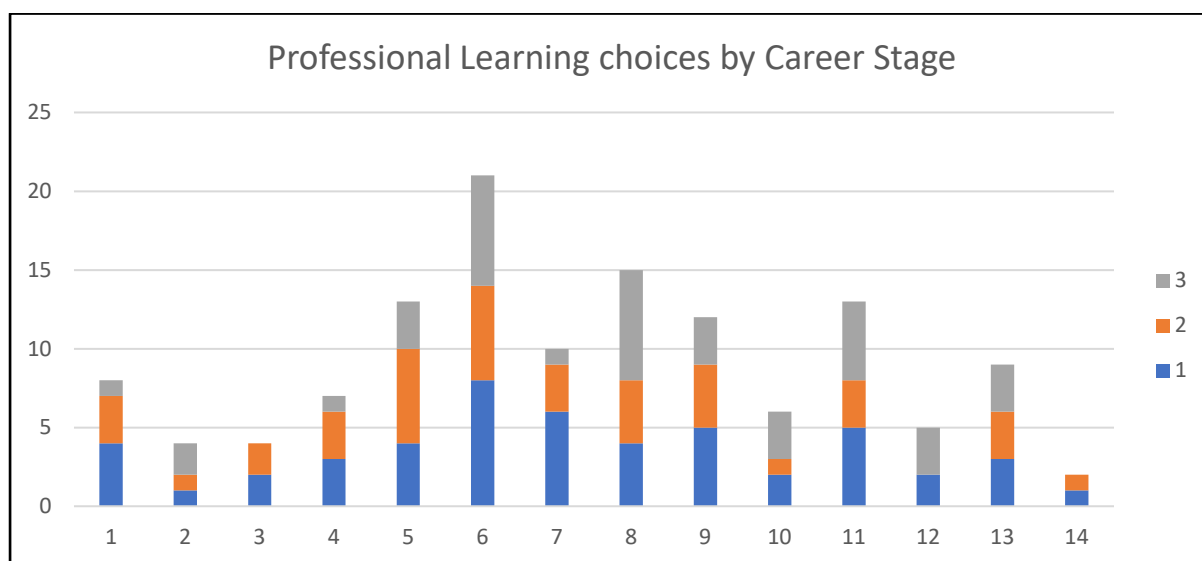
Table 16
Summary of responses to ‘What would you like your HoD / Curriculum Leader to do more or less of?’

Categories	Total responses <i>n=14</i>	Example response
Arrange more team-teaching professional learning	6	“Focus on co-teaching and provide relevant PL on this” “More training”
Find more time for teachers to plan & mark	6	“More time for marking” “Secure time/funding for planning”
Lead professional sharing to promote effective practice	5	“Co-sharing how we’re finding approaches to standards” “More pedagogical discussion”
Use meeting times effectively to focus on pedagogy & systems	5	“Time in meetings to share co-teaching strategies”
Be an expert & lead by example	4	“I’d like my HoD to attempt team-teaching”
Use encouragement / collaboration as a tool	3	“Less authoritarian approach – accept there’s more than one way to do things”
Advocate for team-teaching across the school (use of space,	3	“Be a strong voice with other curriculum leaders”

collaboration across learning areas)		
Protect teachers' time from admin	2	“More time for all of the admin required to teach in an MLE”

Professional Learning

The Teacher Group were asked “*What professional learning do you think would most support your team-teaching?*” and were prompted to select four options, from a list of 14. Figure 12 below presents teacher selections by career stage and Figure 13 lists the options available to teachers.



Notes: N=36 with 1. Early career teachers n=14; 2. Mid-career teachers n=12; 3. Late-career teachers n=10.

Figure 12. *Professional Learning choices by career stage*

1	Observations by colleagues to provide feedback
2	Observations of colleagues
3	Observations by HoD or Curriculum Leader
4	Support to manage relationships with colleagues
5	Support to develop systems to track student learning
6	Exposure to different pedagogies appropriate for team-teaching
7	Support to manage student behaviour
8	More theory about team-teaching
9	Support to use spatial pedagogies
10	PL within own school
11	External PL about team-teaching or ILEs delivered in school
12	External PL about team-teaching or ILEs delivered digitally

13	Attend external conferences or workshops
14	Other

Figure 13. *List of options for Professional Learning*

Option six ‘Exposure to different pedagogies appropriate to team-teaching’ was highly appealing to all three sub-groups of teachers. This finding supports much of the other data gathered and reinforces the point that teachers at different stages in their careers may need different PLD options.

The HoD group were asked “*What professional learning do you think would most support your teachers?*” Their responses proposed:

- Planning modules with interesting contexts and rich learning opportunities [for students]
- Visiting other schools
- Strategies for teaching self-management skills to students
- Visits to other schools for fresh ideas
- Observing best practice

Three responses indicated that HoDs believed that different forms of observation (visiting schools, observing practice) would be beneficial to their teachers, which contrasts with the views of the Teacher Group presented above. However, teachers’ responses in Section Two, which sought their views on what motivated them, included the opportunity to improve their practice and increase their competence at team-teaching. This was central to their enjoyment of team-teaching. This may suggest that due to the constant nature of ongoing, informal observation when team-teaching in an ILE, that teachers now view observation as fundamental to their practice rather than a form of PL.

Support from Senior Leaders

The views of HoDs were sought in response to the question “*What are one or two things Senior Leaders might do to make team-teaching work more effectively for teachers?*” Time emerged as a theme, including senior leaders making meetings more efficient, finding time to “take an interest” in what’s going on by being more present (HoD 5) and taking time to “acknowledge that it’s [team-teaching] happening” (HoD 6). Time for planning and marking “that is protected from other interruptions” was also sought (HoD 4) so they (teachers and HoDs) have time to “do it well” (HoD 6). ‘Doing it well’ could be achieved through timetabling regular planning times (HoD 3). Two HoDs suggested allowing staff to have agency over team-composition. One HoD believed that more clarity and consistency around schoolwide behaviour management, which could be achieved by ensuring students had more choice of courses, would support teachers. HoD 6 believed that senior leaders had little knowledge of team-teaching “I don’t think they know any more about it than I do”. This statement implies a desire for senior leaders to increase their practical understanding of the mechanics

of team-teaching. Finally, HoD 2 proposed that senior leaders needed to make more efficient decisions, rather than trying to reach “a consensus” which can lead to no decision being made.

When asked “*What support might help you lead team-teaching more effectively?*” four HoDs identified the need to move beyond their own school to develop their leadership of team-teaching. The focus of these responses was on finding schools where “team-teaching is working effectively” (HoD 2) through “visits to other schools, for specific PD on what is good and bad team-teaching practice” (HoD 5). HoD 6 suggested “face to face sessions with other curriculum leaders who lead team-teaching and have seen an improvement in student results”. These thoughts are supported by results from Section One where many teachers and HoDs had been unable to ‘access a helpful network of teachers or middle leaders who were team-teaching’. HoD 1 indicated a desire for time to meet with teaching teams but did not specify whether this was to support curriculum, pedagogy, systems or professional relationships. HoD 6 indicated a desire to learn how to “leverage individual strengths and make people aware of how they can work more effectively as teams of teachers”. Finally, HoD 3 wanted an increased level of sharing to help developing effective “listening and collaborative skills in akonga”.

Teachers’ and HoDs final thoughts on team-teaching

Twenty-two percent of teachers and 33% of HoDs responded to the final question *Do you have any other comments you’d like to make about team-teaching?* Five comments were made about teacher suitability and skill as crucial to the success of team-teaching, summarised by Teacher 4 as “some teachers are not suited to this style of teaching” and “You must be flexible” (Teacher 24). Teachers felt pressured to make it work “there is no protocol or help to facilitate good practise [sic] and it is left up to individual teachers” (Teacher 6) and “...many schools go blindly into team-teaching without ever giving staff appropriate support”. (Teacher 20). Two early-career teachers identified the impact of team-teaching on student learning and their ability to form relationships with their students, “with teacher incongruence and the nature of class sizes, a class culture is difficult to create and sustain. Teaching becomes more about managing behaviour rather than deep and meaningful learning” (Teacher 25). This concern about impact was furthered by the belief that “I have less of a relationship with some of my students... as I don’t have an opportunity to connect with all of them in the way I would in my own class” (Teacher 36). HoD 2 proposed that team-teaching did not provide opportunities above that of a traditional classroom, although three teachers mentioned the benefits of team-teaching “if it is done right” (Teacher 8). These benefits include “increased collaboration and collegiality” (Teacher 22) and the ability to “reduce workload and make the job less isolating” (Teacher 20). HoD 6 countered this by stating that “equity in workload remains a challenge”.

4.2.6 Summary of Findings

The findings from phase one and two have shown that there are several factors that influence teachers' implementation and practice of team-teaching in secondary school ILEs. These factors include time, which has several components to it; professional relationships and the perceived impact of team-teaching on students. These factors had both negative and positive impacts on teachers. In many instances teachers and HoDs were aligned in their thinking about these factors, however some differences in perspective were identified. Teachers' perceptions of some of the influences differed at times according to career stage. Generally, teachers and HoDs were motivated to engage with team-teaching, and considered themselves competent. Motivation did correlate with some areas such as the impact of team-teaching on students. The findings from section three identified several areas relating to aspects of teacher identity that influenced teachers' beliefs about team-teaching. These areas include teacher dispositions, beliefs, commitment and philosophy which, along with the findings from the questions relating to professional support, may provide school leaders with ideas to further support successful teacher development. The quantitative findings revealed that teachers specified a need for support with aspects of their teaching practice. However, the qualitative responses in phase one and two revealed that teachers required support in developing and maintaining their professional partnerships with other teachers. These findings are discussed with reference to the relevant literature and research in Chapter Five.

Chapter Five: Discussion

This research set out to identify the ways school leaders might support the implementation and practice of team-teaching in secondary school ILEs. Firstly, an operational definition of the phenomena of team-teaching is presented. This chapter then discusses the key results from the study focusing on the two research questions. It explores English and Social Science teachers' and Head of Departments' opinions in light of the current literature. Secondly, the chapter discusses the ways senior and middle leaders might optimise these factors to support implementation and team-teaching practice.

5.1 Team-teaching – operational definition

Research participants were asked to contribute their understanding of 'team-teaching' and 89% responded. Participating teachers defined team-teaching as "teachers teaching collaboratively, working [with] classes together: planning, sharing [for their] students". Several words coalesced: collaboratively (13 counts), together (12 counts), sharing (10 counts) along with others: equally, working with, taking turns. These words indicate a theme of unity and teamwork that binds team-teachers in a "professional marriage, if you will" (Survey, participant 20). 'Classes' (13 counts), 'students' (10 counts) and 'groups' (5 counts) reinforced the covenantal agreement between students and teachers. There was a focus on planning (10 counts) and delivering content (8 counts) rather than assessing. Eight teachers referred to the cross-curricula nature of team-teaching in open-spaces. Therefore, drawing on the literature and participant responses, team-teaching in this study is operationalized as:

- an action performed by at least two mainstream teachers working together equally to benefit students;
- the joint planning, delivery, marking and assessment of at least two classes;
- inter-disciplinary and/or single-subject curriculum delivery;
- taking place in a mainstream middle or secondary ILE school.

5.2 Research Question One: *What factors influence the implementation and practice of team-teaching for English and Social Science teachers in secondary ILEs in Aotearoa New Zealand?*

Teachers' beliefs were aligned across both phases of the research, and positive and negative factors were identified. Three key themes were identified:

- Time
- Professional relationships
- The impact of team-teaching on students

Teachers' discussions of 'time' sat at the nexus of two areas: one, meeting the needs of their students through planning, teaching and assessing their work (part of the impact of team-teaching on students) and two, their ability to develop and maintain effective team-teaching partnerships, maximizing their professional relationships. The centrality of time is represented in Figure 14 below. This matrix collates the findings of phase one and two to propose that time has an additional impact on teachers' perceptions of their own purpose as teachers, and a corresponding effect on their professional identity as relational practitioners. The matrix also proposes an interconnectivity between the factors identified by teachers in this study, which will be explored in this section.

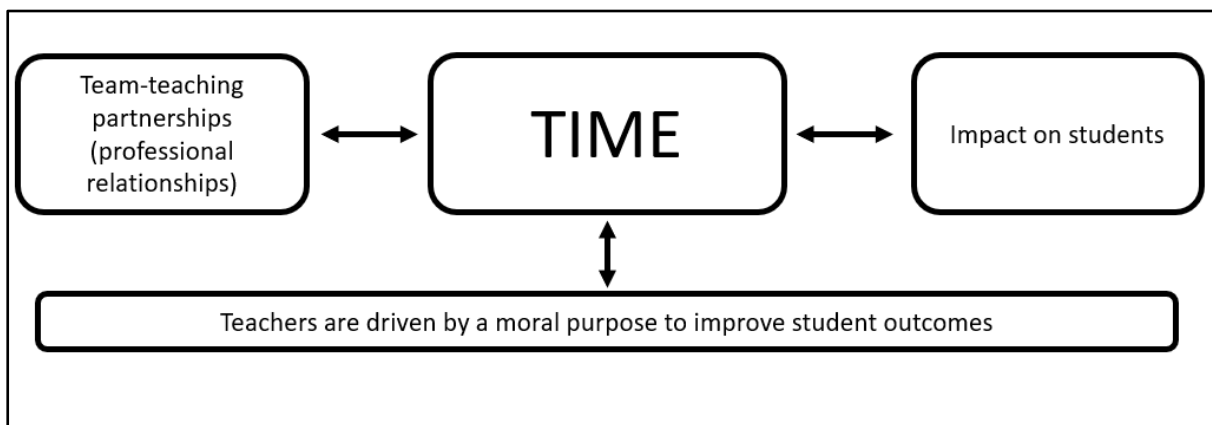


Figure 14. *Time as a significant theme in developing relational practices in team-teaching*

5.2.1 Time: developing the relational components of team-teaching partnerships & managing student learning

Seventy-eight percent of participants were fulltime teachers with no additional formal roles. These teachers had at least twenty hours of scheduled contact time with students per week. Additional time was allocated to pastoral care, attending weekly PL; plus staff briefings and meetings and department meetings. Time is a precious commodity for teachers, and 86% of teachers worked more than 42 hours per week, with 46% working more than fifty hours per week.

Two sub-themes emerged in the findings. Firstly, teachers and HoDs identified a lack of common meeting time for teachers to plan, prepare, mark and assess work. An additional complication was the need to co-construct how ILE spaces were used with students. The timetable was identified as a major constraining factor in limiting meeting times. The timetable made it difficult for teachers to meet during the school day. Teachers also discussed the use of afterschool meeting times, where many felt there was a lack of focus on team-teaching: this included both pedagogy and systems to track and monitor student learning. Secondly, time was a significant factor in teachers' ability to maintain their inter-personal partnerships. Teachers understood the importance of developing and maintaining effective team-teaching partnerships, but the available time limited their ability to move beyond the

urgent student-focused components of the role (planning, marking). Participating schools had teachers engaged in up to four different team-teaching partnerships. These partnerships could include up to four different teachers, resulting in some teachers coordinating time with up to sixteen different teachers. This is a lot of relationships for a teacher to manage in one day, considering the number of intense personal interactions secondary teachers have with students in highly diverse classrooms in NZ (Beckley, 2011; PPTA, 2016).

The complications of time in team-teaching are reinforced in the literature. Rytivaara et al. (2019) propose that the relational elements of developing team-teaching partnerships require additional time. Team-teaching, which has two core functions: increasing teacher knowledge and skill and improving student outcomes, requires a high level of teacher-teacher interaction to achieve both. Rytivaara et al. (2019) discuss reflective practice and its impact on teacher development. They identify time as crucial in reconciling teacher identities to create interdependent partnerships in which reflective practice, and therefore teacher development can take place. A study by Byers, Imms and Hartnell (2018a) found a link between teachers' use of pedagogy and ILE space in improving student achievement outcomes. Significant effects occurred in classes where teachers were able to align pedagogy and spatial affordances offered by ILEs. Teacher interaction time was beyond the scope of that study, however Benninghof (2012) and Villa et al. (2013) identify teacher-teacher interaction as fundamental to improved outcomes for students. Both the relational elements and core functions such as planning, preparing and marking were time consuming but viewed as crucial.

Workload is a constituent of time. There is a paucity of research into teacher workload in secondary school ILEs, particularly for those who are team-teaching across multiple teams. Lovejoy, Mow, Edwards, Waldrip and Prain (2014) discuss Australian case studies of year 8 team-teachers who identified benefits to the 50 students they were teaching. The team-teachers also reported benefits to themselves but time was identified as a constraint. The researchers reiterated the need for school organization and structures to support effective team-teaching. Teachers involved in the Australian research were motivated and committed, despite the additional time it required, but were only team-teaching one class, with one partner.

In New Zealand traditional school environments, teachers report higher stress, lower morale and longer work hours than in previous years (Bonne & MacDonald, 2019), yet most of them (81%) indicate that they enjoy their job. The triennial study undertaken by NZCER, of approximately 700 secondary teachers, revealed that 59% of teachers disagreed, or were neutral that their workload was manageable, and sixty-two percent disagreed or were neutral when asked if their workload was fair. These findings are supported by the PPTA (2016) where teachers indicate they do not have enough time to adequately enact the core components of teaching. Relational teacher-teacher practices were not evaluated or measured by the PPTA (2016) because traditional schools require little formal

interaction between teachers. Teachers have autonomy over how much peer interaction they have, and peer interaction can be reduced when other pressures are present. In the current study, teachers were asked to respond to 'It is less work to team-teach' with 47% disagreeing and 31% giving a neutral response. Workload is an identified issue for teachers in traditional secondary schools, and more research is needed to compare traditional and ILE secondary school workload.

5.2.2 Negotiating Professional Relationships – interdependence, identity, values & conflict

The professional support team-teachers received from each other was identified by participants as a positive factor. Teachers identified the enjoyable aspects of team-teaching with a compatible partner. The HoD group also observed the positive impact of compatibility on partnerships. Overall, when teachers were asked about motivating factors (what is most enjoyable) many viewed their team-teaching partnerships as supporting their development as teachers through the opportunities to observe different pedagogical approaches and learn new content. Partnerships enhanced collegiality and teachers enjoyed 'bouncing' off ideas with another teacher. However, teachers in this study also found the interpersonal aspects of team-teaching partnerships challenging. These challenges included the need for negotiation over content, methods, approaches and managing different expectations and behaviour from students. The emerging theme of 'negotiation' is important, because it crosses two boundaries. Firstly, an individual's skill at dealing with the interpersonal functions of negotiating and working with others when it may challenge their own values and beliefs. Secondly, negotiation also relies on time and each person's concurrent availability to discuss any issues that might arise.

Alterator and Deed (2013) discuss team orientation alongside teacher adaptation to working in open-plan classrooms in Australia. The increased visibility afforded by open-spaces along with planning, teaching and assessing increases individual accountability and traditional departmental hierarchies are delimited. These researchers propose that increased team orientation ensures teachers seek immediate resolutions to issues that arise with other teachers in lessons, rather than seeking management support. Alterator and Deed (2013) refer to this as the "democratisation of authority" as an aspect of teacher adaptability (p. 326). Teacher adaptability is highly desirable in environments where, "the level of scrutiny is high, the volume of interactions are abundant, the negotiation of authority is constant, and the levels of autonomy are variable" (p. 326). The researchers further suggest that in their study teacher inter- and intrapersonal reactions are at the heart of teacher excellence. Gallo-Fox and Scantlebury's (2016) study of secondary co-teachers revealed that when interpersonal relationships were strained, the instructional capabilities of the team were diminished. However, neither Alterator and Deed (2013) or Gallo-Fox and Scantlebury (2016) discussed the constraining effect of time for those involved in multiple team-teaching partnerships at secondary level.

Teachers bring their professional identity to a team-teaching partnership. This collection of philosophy, beliefs and experiences is enacted through a teacher's relational interactions with other teachers and students. Teachers in the current study identified that differing values and beliefs were a source of tension in team-teaching partnerships. Reconciliation of these differences is a time-consuming process that teachers need time and support to achieve. Pratt (2014) and Sileo (2011) both discuss the importance of time in establishing effective professional relationships for team-teaching to flourish. Effective relationships were highlighted in Pratt's 2012 study of middle and high schools in the United States (U.S.). Participants in that study emphasised the importance of teaching with aligned goals whilst still utilising one's own unique skills in the quest for interdependence. Pratt suggests a series of stages partners need to move through to achieve fulfilment and success as a team. Initially, an 'initiation' occurs leading to the middle stage 'the symbiosis spin'. This second stage involved "testing the waters, reflecting to improve and building a partnership" (p. 7). Concurrent to these were strategies to enable collaboration, the compatibility of the partners and the "needed dimensions" which were a series of external factors such as professional development, time and space in which to enact the development of the partnership (p. 9). Pratt's complex model outlines a series of stages that epitomizes the complexity of building effective team-teaching partnerships. However, at a basic level, and supported by Sileo (2011), availability of time remains crucial to the development and maintenance of partnerships.

5.2.3 Perceived impact of team-teaching on students

If teachers are driven by a moral purpose to improve outcomes for students (Fullan, 2003; Mockler, 2011), then evidence of improved outcomes from team-teaching are likely to encourage their efforts. In the current study teachers' beliefs about the impact of team-teaching on students were closely correlated with their motivation to team-teach. Teachers in phase one identified the impact of team-teaching on students as significant to their perceptions about team-teaching. These teachers identified several negative factors, such as noise, distractions caused by the regular movement of students within the space and the lack of personal connectedness with students as demotivating factors for them. Some benefits were identified, namely increased student agency and choice of topics. Correspondingly, teachers' perceptions of the impacts of team-teaching in an ILE were measured in phase two of the study, which revealed ambivalence from teachers. The findings for this are explicated in Section 4.2.4.1. Generally, only half of teachers saw clear benefits from team-teaching for their students. This included the impact of ILE spaces including acoustics which 86% of teachers were either negative or neutral about.

Several points are relevant if some teachers and HoDs are ambivalent about the efficacy of team-teaching in ILE spaces for improving outcomes for students. Firstly, it is complex for teachers to evaluate and measure their efforts as team-teachers in an ILE. There is a limited body of academic research to guide teacher practice that measures the quantifiable effects of secondary level team-

teaching on students in mainstream classrooms. Various literature reviews explore the effect of collaborative practices on primary aged students (Ghazzoul, 2018; O'Reilly, 2016, Ronfeldt et al, 2015) of which team-teaching is a component. However, the effects discussed in a primary context cannot be applied to a general education, secondary setting.

'Hard data' relating to team-teaching in secondary ILEs are difficult to locate, and the researcher could not find any experimental or empirical studies on the effects of team-teaching in ILE secondary schools. Additionally, these types of studies are limited by design, in that the number of influencing variables would be difficult to control. New Zealand assessment data for ILE schools are available, however the data do not differentiate between those classes that are team-taught and those that are not. The identification of appropriate baseline data against which to measure student progress is a noted challenge in the literature on school improvement (Byers et al., 2018a; ERO, 2011; Earley & Porritt, 2014). Additionally, attempts to measure students against the desired 21st century learning principles that drive ILE design and pedagogical innovations are very complex (Bolstad & Gilbert, 2012; Fullan & Langworthy, 2014; OECD, 2013b).

Buick (2016) discusses case studies that provide qualitative evidence into the benefits of inter-disciplinary team-teaching to secondary students which includes providing a deeper, more immersed learning experience that breaks down barriers between subjects. She cites Jang (2006) who used student voice (a form of student evaluations of teaching, or SET), to measure team-teaching efficacy in improving results. SET is regularly used at tertiary level to provide specific feedback to lecturers in supporting course design and teaching practice. Although appreciated by many tertiary educators, there is a body of research debating the effectiveness of SET, due to the subjective nature of individual perspectives and instrument design (Boysen, 2016).

Student voice, which can seek student feedback on any aspect of schooling, is now a regular occurrence in New Zealand schools (Bourke & Loveridge, 2016). Many discuss the benefits and disadvantages of using student voice to measure teacher performance (Bourke & Macdonald, 2018; Charteris & Smardon, 2019; Kane & Maw, 2005), recognising that it is a subjective device that can be useful as an agentic tool for students. Some (Gasson, Burnett, Sanderson & van der Meer, 2018; Irwin, 2009) question the power of student voice for students who traditionally remain silent. As yet, no one has questioned either the complex systematic or moral issues in asking students to provide feedback on multiple team-teachers amongst whom responsibility for student learning and management should be equally shared. A student's ability to define roles and interpret the complex interplay between team-teachers is likely to be limited by many factors, positioning them to provide at best, surface level responses. These complications therefore present challenges to teachers seeking reliable information with which to evaluate the impact of their practice on students.

Teachers' views on the impact of team-teaching in secondary ILEs are likely to be informed by their own observations, the inquiry cycle as part of their personal PLD, and supported by other, more general reading and research. Teachers in this study identified four areas that they felt impacted on students. Firstly, noise and visual distractions. Initially considered an issue in the open-plan classrooms of last century, noise is still a factor. There is a body of literature discussing the negative impacts of noise on student learning (Amlani & Russo, 2016; Connolly et al., 2015; Kristiansen et al., 2014; Shield et al., 2010); on teacher wellbeing (Kristiansen et al., 2013); on students with additional needs (Connelly et al., 2013; Van Reenan & Karusseit, 2017) and for those engaging in complex cognitive tasks (Braat - Eggen, van Heijst, Hornikx & Kohlrausch, 2017; Klatte, Lachmann & Meis, 2010; Nelson, Kohnert & Sabur, 2005). Additionally, one of the core functions of literacy-based subjects is to provide students with an academic vocabulary that prepares them for future study and life (Clegg et al., 2009; Coxhead, Nation & Sim, 2015; Law, Rush, Parsons & Schoon, 2013; Masrai & Milton, 2018). If the methods to achieve this are limited by the design of the space and noise, English and Social Science teachers are likely to question the impact of this on their students (Murphy et al., 2017; Riley, McGregor, Nippold & Troia, 2012).

Secondly, some teachers in the current study questioned the quality of student-teacher relationships. They felt a lack of connectedness with their students when team-teaching and indicated that ILE spaces and having multiple teachers was a disadvantage for some students. A core component of effective teacher practice in New Zealand is a teacher's ability to engage in "positive and collaborative relationships" with learners (Education Council, n.d. p.2). Teachers need to know and respond to learners' individual needs to progress their learning. This applies to all students. New Zealand's education system is bound by a commitment to inclusive education that transcends gender and race and is non-discriminatory. Additionally, due to its bicultural status, teaching in New Zealand is also considered a cultured, relational practice based on a covenantal agreement between student and teacher (H. Waitere, director Te Awheonui. Personal Communication. 12th July 2019).

A third issue raised by teachers was the impact of team-teaching on students with special educational needs. Benade (2019) questions whether ILE spaces in New Zealand can be considered inclusive and he debates the roles space and teacher practice play in supporting student achievement. Benade proposes that "it may well be that human pedagogical failures have more to do with flexible learning environments not meeting the imperative to be inclusive rather than their actual material fabric" (p. 60). He furthers this by proposing that ILE schools seek creative solutions to including students who may feel marginalised in the open spaces. There are several areas overlooked in Benade's discussion, raised by teachers in the current study. Firstly, student-teacher relationships are affected by class size. The long running debate into class size in New Zealand has been heavily influenced by Hattie (2012) who proposes that the effect of smaller class sizes on student achievement is limited. Blatchford, Bassett and Brown (2011), Blatchford et al. (2016), Harfitt and Tsui (2015) and O'Neill (2012)

propose an alternative view that engagement and achievement are significantly affected by increases in class size. There is no current research into the effect on teacher-student relationships for team-teachers managing up to 150 secondary students in ILE spaces over a three or four period day. In four of the participating schools in the current study some **students and teachers could be exposed to up to 600 different person interactions per day**. This has multiple implications for a relational practice such as teaching.

Finally, and most significantly, teachers were concerned about how team-teaching impacted on their relationships with students. It is widely accepted in New Zealand that “Learning relationships have the most direct impact on student outcomes” (ERO, 2011. p. 41). This impact includes teacher-student relationships. Additionally, student engagement is significantly affected by teacher-student relationships (Frelin, 2015; Poysa et al., 2019). Roorda et al. (2017), in their meta-analysis of primary and secondary age students, proposed that previously held beliefs about the influence of positive teacher interaction and student engagement were incorrect. They cited earlier studies that promoted the interaction between primary-aged students and teachers as the most significant. However, their new metanalysis showed that secondary students, who have fewer contact moments and more teachers, had a stronger association between positive relationships and engagement and achievement than primary students. Interest in learning may naturally ebb as young people grow up, which may make “the quality of the relationship with teachers crucial for older students at greater academic risk” (Hamre & Pianta, 2001 cited in Roorda et al., 2017. p. 252). Additionally, New Zealand’s commitment to bi-cultural education practices exhort strong teacher-student relationships as fundamental to ensuring success for Maori students (Bishop, Berryman, Cavanagh & Teddy, 2009; Painting-Davis, 2013; Webb, 2014). It has also been identified that teacher-student relationships are instrumental in supporting good behaviour (McGrath & Van Bergen, 2019; Schwab, Eckstein & Reusser, 2019). The substantial body of research that promotes the importance of teacher-student relationships supports teachers’ beliefs in this study that team-teaching in secondary ILEs can negatively impact students.

Over the past two decades, teachers have been told to put learners at the centre. Team-teaching in a secondary ILE requires increased peer interaction for teachers which seems to contradict learner centred philosophies of education. Teacher time is refocused on finding time for collaboration with the large number of teaching partners inherent to a secondary school environment, and developing and maintaining multiple peer relationships. It seems likely that increased peer interaction might lessen the teacher-student relationship as teachers have limited time to undertake their professional responsibilities. Evans, Butterworth and Law (2019) propose that teachers’ general mental wellbeing is shaped by their interactions with students. Their research found that relationships with students can be both a threat and resource to support teachers’ emotional experience of teaching. The current research has identified that some teachers in team-teaching partnerships feel that teacher-student

relationships are compromised by increased peer interaction. This could have a corresponding effect on their motivation to team-teach which could prove detrimental to team dynamics.

5.3 Research question 2a: *How might senior leaders optimise factors that influence the implementation of team-teaching?*

Several themes have been identified in this study as influencing teachers' beliefs about team-teaching, three of which were discussed in the previous section. School leaders can optimise these areas to support team-teaching by establishing an organisational culture that develops relational trust. Relational trust is characterised by specific dispositions and actions that support teacher change, which can be a vulnerable process. Teacher change is complex and the factors that influence an individual's commitment to adopting new initiatives is grounded within their professional identity and their sense of moral purpose as teachers (Buchanan, 2015; Duignan, 2012). Professional identity is a complex amalgamation of personal, interpersonal and contextual influences. The findings from this research identify areas that senior leaders can focus on to develop an organisational culture that promotes and supports teacher change in several ways:

- Develop school evaluative capability
- Resource and support professional learning
- Take a strategic approach with timetabling
- Put teachers at the centre of team-teaching philosophy

Relational trust is integral to sustainable school improvement and teacher morale (Carpenter, 2015; Robinson et al., 2009). The areas listed above, do not, per se, create relational trust. However, optimising these areas may improve organisational culture by responding to the self-identified needs of team-teachers.

5.3.1 Develop school evaluative capability

A systematic lack of evaluation can impact negatively on school culture and teacher morale as new initiatives may be introduced that waste teachers' time and efforts (Day, 2011). Issues related to the evaluation of teacher practice and gathering of student data were explored in Section 5.2.3. A lack of evaluation can also limit the effect of professional learning activities on teachers, as changes to teacher practice are grounded in a belief that their efforts will support student learning (Guskey, 2002; Merchie et al., 2016). Many schools currently use individual practical inquiries (Timperley, 2008), however this may not provide enough structure or evidence for teachers to believe their efforts are working. Many (Benade, 2015; De Luca et al., 2017; Gregory, 2010; Sergiovanni, 2004) propose that communities of practice and collaborative inquiry are better suited for effective evaluation. Collecting and storing reliable school data can be difficult and needs to be in both quantitative and qualitative form. ERO (2015) recommends that leaders take a strategic approach, drawing on internal and

external expertise to support middle leaders and teachers to ensure they are not overwhelmed as they face change. ERO (2015) propose a series of evidenced based steps for schools to follow to increase their evaluative capability. They suggest that “self-review needs to become embedded as a way of thinking, a culture, a state of mind” (p. 10).

An important aspect of school internal evaluation is the management of student data. Developing systems to track student learning and achievement in team-taught classes was a self-identified area of development for teachers in this study. ‘Teaching as inquiry’ and collaborative inquiry provide models for teachers to reflect upon their practice but are limited if teachers feel unable to measure learning and achievement at a systematic level. Some ILE secondary schools are using data very successfully, but these skills were not shared across schools. This isolation and lack of professional sharing speaks to a lack of connection between ILE secondary schools. ILE schools may be isolated as a result of geographic constraints or as an effect of the self-managing, competitive school model on NZ education that makes it difficult for schools to speak openly about the challenges they are facing (Wylie, 2012). Teachers and HoDs in secondary school ILEs may benefit from increased professional connection with others who are team-teaching in similar contexts. School leaders could consider ways to increase collaboration across schools, to promote the effective use and management of student data and support teachers’ pedagogical development.

5.3.2 Resource professional learning

Professional Learning (PL) and educationally powerful connections are fundamental to successful school improvement that supports teacher change (Robinson et al., 2009). Teachers and middle leaders expressed concern over the lack of externally provided PL. Despite the perceived lack of external PL, teacher development was happening in these schools and teachers recognised the impact of observing others’ team-teaching as a major benefit to their own practice. However, some mid-career teachers expressed concern about the expectations on them to model team-teaching and support other teachers as a form of best-practice PL. Some teachers in this study also identified the role HoDs could play in supporting their professional development. HoDs had the power to model team-teaching and professional sharing to their teachers, acting as ‘experts’ and pedagogical leaders. The type of support teachers preferred differed somewhat according to career stage.

A component of school evaluation is the identification of evidenced examples of best-practice available within the school. Identifying best-practice requires schools to establish baseline data with which to measure the impact of teacher practice on students, to then identify ‘what works’ in their school context. Identifying best-practice, and then resourcing teachers to engage with the most effective teachers in the school is a key function of effective school leadership and sits at the heart of developing evaluative, instructional and organisational capability (Timperley et al., 2010). One of the major benefits of team-teaching is the opportunity to consciously group teachers as a form of

professional development, creating powerful educational connections that can improve student outcomes (Buick, 2016; Carpenter, 2015; Gallo-Fox & Scantlebury, 2016; Robinson et al., 2009). However, observation must be followed by opportunities for authentic reflection and feedback as part of a cyclical process, in an environment where there is high relational trust. At a minimum, reflection and feedback require time, along with several other dispositions and skills. School leaders can support this by creating a culture characterised by high trust and challenge (Benade 2018; Finefter-Rosenbluh, 2016) and need to resource middle leaders time to lead reflection, and teachers time to engage with it. Additionally, school leaders could maximise PL budgets to include resourcing middle leaders to support teacher-teacher interpersonal relationships. ILE schools and team-teaching require middle leaders to move beyond leading curriculum and pedagogy and resourcing them with external or internal expertise will support this.

Teachers have different needs for PL at different stages in their career. Career stage is a powerful influence on teacher development and change. Day (1999) debates various theoretical stages that teachers move through but argues for the rejection of a linear model as an oversimplification. He proposes that success or failure as a teacher is heavily influenced by contextual factors. Day and Gu (2007) further this by proposing the specific stages that teachers pass through are mediated by the personal, the situational and the professional. These influences are not static and managing the fluctuations of these were viewed as key to teachers' sustained "commitment and effectiveness" at changing their practice (p. 424). Many factors can influence teachers' commitment to PL (discussed in Section 5.2) and teachers and middle leaders in this study clearly signalled their PL needs, which are evidently different according to career stage. Day and Gu (2007) and Brunetti and Marston (2018) argue that teacher development, career stage and teacher identity are inherently linked. Hierarchical structures mean senior leaders are less likely to closely understand the minutiae of individual teachers' circumstances, including their career stage or where they are at in their professional life cycle. This knowledge includes the specifics of their professional identity (how they see themselves as a teacher). Middle leaders need to be resourced to respond to the individual PL needs of their teachers, taking career stage, professional life cycle and professional identity into account.

School leaders can optimise PL by ensuring it achieves the desired outcome. This requires careful planning and evaluation to measure the impact of the PL activity. Impact evaluation can support higher teacher morale and sustained school improvement and can be applied to any PL activity (Earley & Porritt, 2014; Guskey, 2002). Well planned PL underpins effective school leadership and teacher change (Robinson et al., 2009). Additionally, an effective school culture and climate can be created by school leaders who act as "agents of change" creating a stable environment where cultural assumptions can be explored and challenged (Lakomski, 2001. p. 70; Duignan, 2012; Fullan, 2001). Team-teaching in a secondary ILE can be turbulent and cultural norms must support the development of relational trust, a culture of questioning and problem posing and be driven by a clear ethical and

moral vision. Earley and Porritt (2014) propose an extended evaluative framework that draws on research conducted for the *Effective Practices in Continuing Professional Development Project (2007 – 2009)*. Their work builds on ideas discussed by Guskey (2002), Merchie et al. (2016) and others. Utilising a form of impact of evaluation for PL activities may support more effective, sustained changes in teacher practice, as change becomes measured and evidenced. Evaluation may increase relational trust, as teachers start to see the impact of their efforts (Timperley et al., 2010)

5.3.3 Take a strategic approach with timetabling

Teachers and middle leaders in this study viewed the school timetable as a major constraining factor impeding their team-teaching. Firstly, the timetable inhibited cooperative teacher non-contact time and secondly, it limited middle leaders attempting to intentionally develop teams. HoDs described it as the biggest impact on team-teaching and being “at the severe detriment to the well-being of the collaborative team and therefore the quality of the teaching and learning that takes place” (Phase one, HoD B). All of the schools in the study used forms of block scheduling and most operated on a two-semester year.

Block scheduling has many advantages. Carroll (1997) proposes that traditional lessons ensure teachers see too many students and spend too much time transitioning between lessons, for deep and personalised learning to occur. This view is supported by Fullan and Langworthy (2014). Carroll (1997), supported by Schoenstein (1997) and Shore (1997), propose improved climate, less burnout to students and teachers and increased academic results. Mason (1997) and Fogarty (1997) both propose that block scheduling refocuses teaching on learning and increases students’ cognitive engagement with the learning process. Hipkins (2008) discusses the advantages and disadvantages of block scheduling. She proposes that longer lessons do not necessarily create changes in teacher practice that embrace 21st century learning principles. Rather, it is how teachers use the time that impacts on students.

There is limited literature measuring student perceptions of block scheduling, however Hipkins, Shanks and Denny (2008) gathered student and teacher views on extended length periods in a New Zealand school. They identified differences between student and teacher perceptions of the impact of time on learning, with students preferring shorter lessons. In the current study, block scheduling did have negative impacts. Firstly, increased lesson length reduced the number of non-contact periods each teacher had per week, which limited the frequency of cooperative meeting time available in the school day. This in turn meant that teachers were required to find time outside of school to meet, leading to scheduling issues, particularly when team-teaching in multiple groups. Fewer non-contacts reduced the effectiveness of teams as it limited time as a team. Additionally, in phase one of the study, the two early career teachers also referenced the challenges of managing a 100+ minute lesson when team-members had not contributed properly to the planning. This lack of preparation was described as

“... having to pull [it] out of your backside” and placed less experienced teachers in a vulnerable position.

Improvements in digital technology have enabled schools to shift to ‘student centred timetables’ (Wood & Whittaker, 1998). Historically, “student subject choices have been limited by selection from sets of classes (stacks) from which only one of the set can be taken” (Wood & Whittaker, p. 1146), which could reduce student access to some subjects. Student centred timetables reduce the number of student clashes but increase student choice, although a 100% match is rarely achieved. All schools in this study employed a ‘student centred timetable’ philosophy, prioritising student choice, as it is widely viewed as central to student engagement. However, the impact of teacher-student relationships (discussed in Section 5.2.3) also impacts student engagement. As yet, there are no studies exploring the impact of timetable structures on student achievement in New Zealand. Teachers and HoDs in this study, supported by much evidence, proposed that autonomy and choice over team formation increased team effectiveness, which could have a corresponding effect on student engagement and achievement. School evaluation requires school leaders to review timetable priorities to evaluate the impact of teacher versus student centred timetables. There may be significant gains for teachers and students by prioritising teaching-team formation.

5.3.4 Put teachers at the centre of team-teaching philosophy

Team-teaching in a secondary ILE is a relational practice that relies on teacher commitment to an overarching philosophy. Developing a culture that supports teachers to commit to the philosophy, by placing them at the heart of change initiatives and PL may improve student outcomes (MacNeill, Prater & Busch, 2009). MacNeill et al. (2009), in their study of 29 U.S. schools, identified a link between principals establishing a clear vision that teachers engaged with, and a healthy school climate. This in turn effectively enhanced learning for students. Leaders can promote change by challenging assumptions and creating an environment of hope where success is seen as possible as they establish a new vision or philosophy (Schein, 2010). Robinson et al. (2009) propose specific leadership dimensions, knowledge, skills and dispositions (see Figure 2.3) that include “engaging in constructive problem talk” and “analyse and solve complex problems” which can support change initiatives aimed at teachers (p.49).

If school leaders want teachers to commit to engaging in team-teaching in a secondary school ILE, requiring changes in practice that may challenge their professional identity and firmly held beliefs, then a culture that puts teachers at the centre can support this. Harris and Jones (2017), Louis, Kruse and Raywid (1996) and Kneyber (2014) all propose that school leaders act as advocates for teachers, asking ‘what can we do for you?’ rather than ‘what can you do for us?’. Teachers and middle leaders in this study have identified complex, interconnected factors that influence team-teaching in secondary ILEs. School leaders of secondary school ILEs wield significant power in advocating for

teachers, to the Ministry of Education. Secondary ILEs are a politically sensitive topic that garner a lot of national attention, and we all have a commitment to ensuring students succeed in these learning environments. School leaders are driven by a moral purpose to support students and are well positioned to engage in constructive problem-talk at a national-level about the complex factors identified by teachers. Significant gains may be achieved by shifting the focus slightly and putting both teachers and students at the centre of team-teaching philosophies.

5.4 Research question 2b: *How might middle leaders support teachers to develop their team-teaching practice?*

Middle leaders are at the ‘coal face’ and are well positioned to support teachers to develop their team-teaching practice, despite the limited time allowance they are allocated. Middle leaders in this study are already leading curriculum and assessment. Responding teachers identified a need for the development of pedagogical and relational practices, and this included teacher dispositions, attitudes and beliefs (an aspect of professional identity) and team dynamics. Time and effort in three areas are likely to yield the best results for developing team-teacher practice in secondary school ILEs.

5.4.1 Develop teacher professional identity as team members

Teachers and HoDs in this study believed that personal dispositions, competencies and beliefs were impactful on team-teaching. Eighty-six percent of teachers also agreed that ‘When I have synergy with a colleague it makes team-teaching easy’. Three statements measuring professional relationships (see Table 4.12) correlated highly with teachers’ motivation to engage in team-teaching. At the same time, both HoDs and Teachers viewed the current teacher shortage as impacting on the successful formation of teaching teams as teachers were recruited who were viewed as unsuitable due to their beliefs or personality characteristics. Two recurrent themes emerged from the findings; teachers and HoDs believed that not all teachers were suited to team-teaching and, interpersonal relationships were both a challenge and benefit of team-teaching. Team dynamics, summarised nicely by the word ‘synergy’ seems to be an elusive, yet desirable quality of team partnerships. Middle leaders are well positioned to optimise synergistic team-teaching relationships and relevant PL can support this aspect of developing teacher identity.

Teacher professional identity evolves over one’s career, influenced by multiple, interconnected, complex factors that include the personal, the political and local school context (Buchanan, 2015; Day, 2004; Mockler, 2011). The development of identity is linked to career stage and professional life cycle (Day & Gu, 2007). Brunetti and Marston (2018) propose three phases drawn from Day et al’s (2007) framework that teachers pass through in their development as professionals: phase one, teaching 0 – 3 years; phase two, teaching 4 – 7 years; and phase three, teaching 8 – 15 years. These phases are characterised by six areas that support their development. These six areas, in which

teachers showed growth in knowledge and skills also contribute towards their professional awareness of how they operate as practitioners, and contributed to their feelings of autonomy and control as they gained classroom experience. The six areas are summarised as:

- balance
- leadership
- validation
- collaboration
- relationships with students
- professional development.

The model proposed by Brunetti and Marston (2018) has interesting implications for middle leaders developing team-teachers' relational practices when they are in their first years of teaching. These authors believe that the six identified areas interact with other influencing aspects (the personal, the political and local context) to solidify teacher professional identity. If teachers develop along a trajectory, they propose that a coherent sense of one's own identity fully emerges in phase three. A key function of effective middle leadership is to help teachers form their professional identity, as it is the collection of values, beliefs, attitudes and purpose that teachers bring to a partnership that will either work synergistically with others, or not. PL that supports the development of teacher identity and enables teachers to reflect on what drives their practice, actions and beliefs provides useful clarity. When groups of teachers understand themselves as individual teachers, they may be enabled to collaborate equally and effectively with others.

5.4.2 Enhance and optimise team relationships by encouraging commitment to the philosophy

Middle leaders can support the school's philosophy for teaching and learning by creating micro-cultures that support team-teaching within their learning areas. Micro-cultures are created by deliberately co-constructing a vision that members feel committed to that aligns with the wider philosophy of the school. To achieve this, middle leaders need to know what teachers' true beliefs are about team-teaching. Marzano et al. (2005) propose that change can be classified as "first" or "second order" (p.112). First-order change requires little emotional commitment as it does not challenge individual's attitudes and beliefs, and the change is perceived as an extension of the past. Second-order change is more complex, in that it conflicts with prevailing beliefs and norms. Second-order change can require a greater emotional commitment and more energy. Data gathered in this study shows that teachers have varying levels of motivation to engage in team-teaching and there are multiple factors associated with these factors. Team-teaching requires a shift in pedagogy that requires significant change for some teachers that may include the subjugation of their beliefs and teaching methods as part of a team. Evaluating the magnitude of this change, in a non-judgemental manner, may be a first step towards garnering commitment and forming more effective teams.

If school culture is formed of assumptions, norms and beliefs, and individual teacher identity is similarly formed, then a process of acculturation takes place to enable behavioural change in teachers that integrates two, possibly contradictory, philosophies. Addressing the psychological rationale behind resistance and creating the right conditions to overcome fear of change is necessary. Schein (2010) proposes eight steps to creating psychological safety, presented in Appendix XIV. These steps are considered along with an understanding of the stage the teacher and organisation are at in their lifecycle. Of the six participating schools, four were at the “founding and early growth” stage and two were at the “midlife” stage (Schein, 2010. p. 280). This variability has implications as cultural norms and assumptions emerge differently depending on organisational life cycle. Middle leaders can support the development of more effective teams by engaging teachers in discussions and providing support that will align their individual identity and philosophy with that of the school.

Middle leaders can support the development of relational trust between teachers to help form more effective teams. The factors that work against the formation of teams are explicated in Section 5.2, however, middle leaders can model the behaviours outlined by Robinson et al (2009) in Section 2.5.2 to create environments where teachers are accepting of the different strengths each teacher brings to a partnership. Creating the right environment requires significant time and effort from teachers and middle leaders, above and beyond the core functions of their role. If teachers feel motivated to put in the additional effort required to develop their relational practices, then significant gains will occur. Motivation stems from a combination of one’s beliefs in their competence, their level of interest or enjoyment and their ability to exercise control and have autonomy over the domain they are working within (Bandura, 1993; Deci & Ryan, 1985). Motivation can be highly personal, but many propose that teachers are motivated by a commitment to their students as an aspect of their identity (Buchanan, 2015; Mockler, 2011; Saunders, 2013). In this study, teachers were generally quite motivated to engage in team-teaching and found it enjoyable. A high proportion did report feeling pressured to engage in team-teaching, yet this perception of pressure did not affect their overall motivation, which contradicts previous findings about the effect of pressure on levels of motivation. Middle leaders can act as a motivating force to teachers by prioritising relationship work that helps create synergy, which in turn may increase competence and enjoyment.

5.5 Summary of discussion

The findings from this research revealed that teachers’ and HoDs’ beliefs about factors that influence team-teaching were aligned, but that some differences were apparent. These findings have reinforced the literature in several areas. External influences such as school leadership, ILE spaces, professional relationships and time are identified as impacting on the implementation and practice of team-teaching. Furthermore, the relational elements of team-teaching practice have been highlighted as a

significant factor for teachers. The findings from this research also aligned with much of the literature on the role senior and middle leaders can play in supporting pedagogical practice for teachers.

This research also makes some original contributions. It has explored how time is interconnected with professional relationships along with the importance of evaluating the impact of pedagogical change on both teachers and students. Participants in this study were motivated by a belief that team-teaching positively impacted on student outcomes. The interconnected areas of time, professional relationships and positive student outcomes have been identified as influencing teacher commitment and motivation to engage in team-teaching. This research has also expanded on the notion of teacher identity. The research has looked at the impact of contextual factors such as teaching space (ILEs) and pedagogy as a relational practice (team-teaching) on the development of teacher identity. Contributions to the literature are also made in the area of teacher development and professional life cycle or career stage, by producing findings that reveal, that in the context of this study, some teachers have different PL requirements according to their level of experience.

Finally, this study found that many participants viewed team-teaching as a pedagogical approach that only some teachers were suited to. This finding reinforced current thinking in the literature, which proposed that particular dispositions and attitudes were necessary for team-teachers. This has implications for schools as we are experiencing a global shortage of teachers. The findings from the study, and the literature, along with an acknowledgement of the contextual factors that influence teacher appointments to secondary ILEs suggest that an adjustment may need to occur when evaluating teacher suitability as part of a team-teaching partnership.

Chapter Six: Conclusions

6.1 Introduction

This research was undertaken because team-teaching in secondary ILEs in Aotearoa is an emergent area of practice and there is currently no research exploring the ways it can be supported by school leaders. Recent education policy has promoted a shift to team-teaching in newly built ILEs. Physical space is viewed by some as enabling a shift in pedagogical practice that encourages teachers to incorporate 21st century learning principles. One of the key reasons for undertaking this research was to identify factors that English and Social Science teachers viewed as impacting the implementation and practice of team-teaching. These factors might then be optimised to better support teachers to improve outcomes for students.

The sample groups for this research were English and Social Science teachers and HoDs drawn from six secondary school ILEs. A mixed-methods research approach was employed which spanned two phases. Initially, phase one utilised semi-structured interviews with a small sample of teachers and HoDs to gain their views on factors that influenced team-teaching. Their views informed the development of an instrument for phase two, in which a larger sample were questioned via a survey.

6.2 Research questions

This study set out to answer three research questions:

Research Question 1:

What factors influence the implementation and practice of team-teaching for English and Social Science teachers in secondary innovative learning environments in Aotearoa New Zealand?

Research Question 2a:

How might senior leaders optimise factors that influence the implementation of team-teaching?

Research Question 2b:

How might middle leaders support teachers to develop their team-teaching practice?

The study has produced sufficient data to answer the three questions

For Question 1 clear evidence from both teachers and HoDs showed that amongst several factors time was the biggest factor influencing team-teaching for English and Social Science teachers. Time sat at the heart of the relational practice of team-teaching in a secondary ILE where teachers are likely to be involved in multiple teams. Time influenced the quality of professional relationships for teachers and

was a factor in teachers reflecting on their practice. Time also influenced teachers' ability to enact the core functions of their job in meeting the needs of their students. This had implications for their commitment to team-teaching.

There was also clear evidence from the data to answer Question 2a. Participants identified that more robust and ongoing internal school evaluation would support the implementation of team-teaching and provide teachers with a feeling of confidence that their efforts were both valuable and worthwhile. Other organisational factors, such as the provision and availability of professional learning, the design of the school timetable and a repositioning of teachers as central to the development of the school's philosophy for learning were significant.

For Question 2b, the data revealed that both teachers and HoDs could support teacher practice by developing teachers' relational competencies as team-teachers. Many teachers and HoDs believed that teachers required specific dispositions to work collaboratively in teacher partnerships. It was also identified that career stage was a factor that needed consideration. Teacher development could be supported through the formation of both individual and collective teacher identities that worked together to support the school's philosophy of learning.

6.3 Key outcomes

Along with answering the research questions, this study has generated two key outcomes.

Firstly, the literature on 21st century learning principles links ILE spaces with the development of competencies that are viewed as desirable as society faces major social, political and environmental changes. Many participants in this study did not see ILE space complementing their team-teaching practice. They appreciated the increased opportunities for collaboration with other teachers but this collaboration required more time, rather than the affordances provided by space. This implies that the design of ILE spaces needs to be reviewed so they can better complement teacher practice. It could also suggest that team-teaching is more reliant on conceptual space that allows collaboration rather than physical space. Teachers also require both physical and conceptual spaces for pedagogical and relational matters, which are often entwined for those who are team-teaching.

Secondly, the leadership of team-teaching required HoDs to shift beyond their traditional roles as leaders of curriculum, assessment and pedagogy, as well as providing professional learning and development and leading the formation of a micro-culture within their learning area. Team-teaching is a relational practice that requires increased peer interaction which teachers need support to navigate, negotiate and manage. Teacher PL and development in this area also required HoD development. Effectively leading and receiving relational PL required new skills and dispositions for all involved, which needed to be adequately resourced. This resourcing requires not just physical time and space, but a conceptual space that supports self, and peer, reflection.

6.4 Limitations of this research

The present study had some limitations. Firstly, a convenience sample was drawn, which along with the small sample size for phase one and two, made it difficult to draw conclusions against the wider population of team-teachers in secondary ILEs. Therefore, there is limited transferability or generalisability of the findings from this study. Secondly, it is possible that the population parameters were skewed, in that only participants who felt very strongly about team-teaching chose to respond to the survey. This reinforces the difficulty in drawing conclusions across a wider population. Finally, in phase two, participants specified different types of support they received, and their views on team-teaching versus that of teaching as an individual were gathered. However, they were not given the opportunity to quantifiably state whether any of this mattered to them. This was partially addressed by enabling open-ended responses, which had a very high response rate. The concurrent analysis of data enhanced the reliability of the findings.

6.5 Implications of this research

The convergent analysis of data in phase two revealed that career stage impacted teachers' perceptions of team-teaching. This is supported by the literature. In this study, different factors mattered to teachers depending on their level of teaching experience. This has implications for school leaders as they work with groups of teachers and may have implications for attrition and retention which is an issue for ILE secondary schools in New Zealand. Teaching is complex knowledge work that requires commitment, care, emotion and energy. Mid and late-career teachers are likely to bring a developed sense of professional identity to their team-teaching partnerships. Subjugating one's beliefs about 'what works' can be very challenging and uncomfortable. Therefore, for changes in practice to occur, mid and late-career teachers may need clear evidence that changes in practice actually work. This can be achieved through more robust, school-wide internal evaluation that problematizes, challenges and reviews existing systems and structures. Additionally, more experienced teachers in team-teaching partnerships have a greater influence in shaping the identity of early career teachers. This places an additional responsibility on these teachers that needs further consideration. This study showed that only half of participating teachers viewed team-teaching as impacting positively on their students, but 81% of teachers agreed that teachers who were not committed to the philosophy affected everyone. If teachers view changes to their practice as effective, they may be more likely to commit to the philosophy and be supportive of other teachers.

Early-career teachers who are team-teaching across multiple teams are likely to have less formed professional identities. Teacher identity has been conceptualised in the literature as developing across various phases, drawing on multiple influences that include the personal, the political and the specific contextual factors of the school. Early career teachers who are constantly observing other teachers'

practice will require much more explicit training in developing reflective practice, so that their own professional identity has a chance to form and evolve. Providing early-career teachers with the space, time and skills to reflect on their own practice may create a cyclical process that enables individual identities to coalesce into a stronger collective identity. This speaks to a need to reconceptualise the ways teacher professional identity is formed for those team-teaching in secondary ILEs.

The interconnected factors of time, professional relationships and the impact of team-teaching on students and teachers needs consideration. These factors appear to impact on teachers' commitment and motivation, potentially influencing their ability to commit emotion and energy to adapting their practice and working closely with other teachers. Concurrent to this, many HoDs and teachers in this study believed that only some teachers were suited to this form of pedagogical practice. There are many reasons why teachers may not be suited or committed to team-teaching. However, suitability is a major implication if team-teaching and collaboration become common pedagogical practices while we are experiencing a national shortage of secondary teachers. This has implications for senior and middle leaders in their leadership of team-teachers in secondary ILEs, as they must consider the contextual factors that influence teacher appointments and retention.

6.6 Future research

The findings of this research are specific to team-teaching in secondary ILEs in New Zealand. It is possible that the conceptualisations of career stage and teacher professional identity and their resultant effect on teacher change can be applied across a wider range of topics within teaching. Further research exploring how teacher identity is formed for secondary teachers engaging in collaborative practices is required. Two additional areas for study have also been identified. Firstly, this study focused on the leadership of teachers and did not aim to quantify the effect of secondary-level team-teaching on students. This is an area for further research, as teachers identified this as an important motivation for them. Secondly, this study did not examine whether teachers were transforming student learning through the inclusion of 21st century learning principles. The ILE literature of the late 20th century proclaims this as implicit to collaborative practice in ILE spaces, and an evaluation of this provides an area for future study.

6.7 Value of this research

Education in New Zealand appears to be at another crossroads as changes in education policy are happening rapidly due to a recent change in government. In the past two months most information about innovative learning environments has been removed from government websites and publications, possibly signalling a new direction for school property in New Zealand. The physical space afforded by ILEs was once viewed as fundamental to the development of specific competencies that would provide students with the knowledge, skills and dispositions to solve the *wicked problems*

posed by socio-political, economic and environmental change. Team-teaching and collaborative teaching practices were viewed as the pedagogical method to support student learning in ILE spaces as they acquired these competencies.

The current study has shown that many teachers believe that team-teaching can benefit student learning “if it is done right” and contrived collegiality is avoided. The study has also shown that team-teaching is a practice that requires time, as well as space. The study identified many factors that influenced teachers’ beliefs. Teachers viewed team-teaching as an enjoyable activity that might improve their practice, as it has the potential to reduce workload and increase their competence as teachers, if synergistic relationships are formed, and teachers are supported by school leaders. It is hoped that more research will be done to validate the findings of this study, and further investigate the impact team-teaching can have on student learning, as we continue to search for solutions to the wicked problems we face as a society.

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Date: 01 April 2019

Dear Amanda Robinson

Re: Ethics Notification - **400020817 - 1. Factors that influence the application and practice of team-teaching by English and Social Science teachers in secondary ILEs in Aotearoa New Zealand.**

Thank you for your notification which you have assessed as Low Risk.

Your project has been recorded in our system which is reported in the Annual Report of the Massey University Human Ethics Committee.

The low risk notification for this project is valid for a maximum of three years.

If situations subsequently occur which cause you to reconsider your ethical analysis, please contact a Research Ethics Administrator.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research."

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Professor Craig Johnson, Director - Ethics, telephone 06 3569099 ext 85271, email humanethics@massey.ac.nz."

Please note, if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to complete the application form again, answering "yes" to the publication question to provide more information for one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

Human Ethics Low Risk notification

A handwritten signature in blue ink, appearing to read 'C Johnson', on a light-colored background.

Professor Craig Johnson
Chair, Human Ethics Chairs' Committee and Director (Research Ethics)



MASSEY UNIVERSITY
INSTITUTE OF EDUCATION
TE KURA O TE MĀTAURANGA

**Factors that influence the application and practice of team-teaching by English
and Social Science teachers in secondary ILEs in Aotearoa New Zealand.**

PARTICIPANT CONSENT FORM - INDIVIDUAL

I have read, or have had read to me in my first language, and I understand the Information Sheet attached as Appendix I. I have had the details of the study explained to me, any questions I had have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree/do not agree to the interview being sound recorded.
2. I wish/do not wish to have my recordings returned to me.
3. I wish/do not wish to have data placed in an official archive.
4. I agree to participate in this study under the conditions set out in the Information Sheet.

Declaration by Participant:

I _____ hereby consent to take part in this study.
Full name

Signature: _____ Date: _____



MASSEY UNIVERSITY
INSTITUTE OF EDUCATION
 TE KURA O TE MĀTAURANGA

04 June 2019

Dear

My name is Amanda Robinson and I am a secondary school teacher/former Head of English who is completing her Masters of Education in Educational Administration and Leadership. I am writing to invite your school to participate in a research study from June 2019 about team-teaching by English and Social Science secondary teachers in Aotearoa New Zealand.

Secondary education in New Zealand is changing with the introduction of new innovative learning environments (ILE). Although team teaching is promoted in ILE research literature and education policies, how prevalent it is and what factors influence it, is not known in New Zealand. This Master's Thesis study aims to gather information from teachers and curriculum leaders in English and the Social Sciences to explore the factors that influence team-teaching. If you give your permission for the study to be conducted in your school I would invite the English curriculum leader, plus two teachers from either English or Social Sciences to be interviewed (approximately 30 minutes via Skype or telephone). After this, I would send an online questionnaire to your English and Social Science curriculum leader, and all of the teachers in these learning areas. The survey may take approximately 15 – 20 minutes to complete.

If you, and the English/Social Sciences staff, deem it to be appropriate, I suggest I visit the school very briefly to introduce myself at a break, staff briefing or another appropriate time (10-15 minutes), sometime around mid-June. .

Your views would contribute to understanding about team-teaching in secondary ILE schools. If your school participates, a one page summary of the findings will be given to you at the end of the study which may further support your ILE processes and systems. I would be more than happy to further discuss specific findings with your learning areas if that was their desire.

If your school is willing to participate, then please return the attached consent form by email, preferably by 14 June 2019. If you would not like your school to participate, then please delete this invitation. Thank you very much for offering the time to consider this.

Amanda Robinson

Ethics

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

Amanda Robinson

e: [REDACTED]

p: [REDACTED]

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Prof Craig Johnson, Director, Research Ethics, telephone 06 356 9099 x 85271, email humanethics@massey.ac.nz”.

Project Contacts

Amanda Robinson, Masters of Education (Educational Administration and Leadership) student at Massey University [REDACTED]

Supervisors: Karen Anderson Phone 06 356 9099 extn 84451 K.F.Anderson@massey.ac.nz. and Associate Professor Jenny Poskitt j.m.poskitt@massey.ac.nz Phone 356 9099 ext 83070

Phase Two- Survey

Factors that influence team-teaching for English and Social Science teachers in ILEs in Aotearoa New Zealand

Introduction

Page 1 **Research Information Sheet**

Have you been teaching, or leading teachers of, year 9 - 13 English or Social Sciences in a middle or secondary school during 2018 & 2019? If that is the case, I would like to invite you to participate in research that is exploring the factors that influence the implementation and practice of team teaching in Innovative Learning Environments (ILEs).

Researcher Introduction

My name is Amanda Robinson and I am a student at Massey University completing the final year of my Masters' in Education (Leadership and Administration). I'm a secondary English teacher, and former Head of English. I am conducting research to find out what factors influence teachers and Heads of Departments/Curriculum Leaders to engage or not, in team-teaching. Additionally, I am identifying the ways these factors can be maximised by teachers and HoDs. I would like to invite you to share your experiences of teaching in an ILE.

What is the research about?

The aim of this research is to gain an understanding of the main factors that influence teachers and HoDs of English and the Social Sciences, working in ILEs, to team-teach, or not.

Why should you participate?

I hope that the findings from this research can be shared with the teaching community to assist and support teachers and school leaders considering team-teaching pedagogies in their own school's context. This research may provide a foundation for further research into the implementation and practice of ILE pedagogies in New Zealand schools, which will benefit the children in these schools. Your participation in this research will help make this possible.

How long will it take? The survey should take no longer than 15-20 minutes. There are a range of Likert-type scale questions and some optional open-ended questions.

Why have you been selected? The invitation to participate is open to any teachers of year 9 – 13 students, who teach English (this can include ESOL and Literacy classes) and Social Science subjects. It is preferred that teachers from middle, secondary or senior high schools, built with an open-learning design, participate. Curriculum leaders, Heads of Department and Heads of Faculty are also invited to take part in this questionnaire. A purposive sample of teachers is sought that includes a range of teaching experience. Teachers and HoDs/HoFs do not have to have engaged in team-teaching to participate in this questionnaire.

Will it be anonymous? Anonymity will be upheld by ensuring that participants cannot be identified through any of the information published in the research and you will not be asked your name unless you would like to be entered in the prize draw. Any identifiable information about schools or teachers will be removed. Information regarding age, gender, culture or religion is not sought.

Prize Draw If you would like to enter a prize draw to win a \$100 petrol voucher, please tick the box at the end of the survey and leave an email address.

What will happen to my responses? The responses for this questionnaire will be stored on Qualtrics and will only be accessible by the researcher and supervisors. Data will be destroyed after five years. You have the following rights:

1. Participants may decline to answer any question.
2. Participants may withdraw from the study at any time.
3. Participants may ask any questions, of the researcher, during the study.
4. Participants provide information on the understanding that it is anonymous and will not be used unless explicit permission is given.
5. Participants will receive a summary of the findings when the study is complete.

Completion of the questionnaire implies that the consent of the participant has been given.

Ethics “This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University’s Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research. If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Prof Craig Johnson, Director, Research Ethics, telephone 06 356 9099 x 85271, email humanethics@massey.ac.nz”.

Further information? If you have any questions regarding your participation in this questionnaire, then please feel free to contact the researcher Amanda Robinson [REDACTED], or the researcher’s supervisors Associate Professor Jenny Poskitt: J.M.Poskitt@massey.ac.nz and Karen Anderson: K.F.Anderson@massey.ac.nz.

Thank you for your time.
Amanda Robinson

Please identify your role

- I am a Head of Department / Curriculum Leader (1)
- I am a teacher (2)

Section 1 for TEACHERS

What do you understand by the phrase 'team-teaching'?






The following statements seek your opinion about the support you receive for implementing and practicing team-teaching.

Leadership

Print display issue, please note that 1 = Strongly Disagree, 9 = Strongly Agree, with a 'Not Applicable' tick option.

Strongly Disagree Strongly Agree Not Applicable

1 2 3 4 5 6 7 8 9

1.1 My curriculum leader/HoD supports me to team-teach	
1.2 My Curriculum Leader / HoD seeks my opinion about which teachers I might work well with	
1.3 My Curriculum Leader / HoD works with team-teachers to develop their inter-personal relationships	
1.4 School leaders support me to manage student behaviour	
1.5 My school's philosophy & vision does not support and promote team-teaching	

Professional Learning

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.6 I have been supported with professional learning time to develop the knowledge and skills I need to team-teach effectively									
1.7 My school provides access to ongoing Professional Learning to develop my use of team-teaching pedagogies									
1.8 I have not been able to access helpful specialist advice outside of the school about team-teaching									
1.9 I have been able to access a helpful network of teachers outside of my school who are team-teaching									
1.10 We have not had enough opportunities to explore deeper ideas that underpin team-teaching pedagogies									

Professional Relationships

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.11 My team-teaching colleagues support me in managing student behaviour									
1.12 By observing team-teaching colleagues I have been challenged to rethink some of my assumptions about what good teaching looks like									
1.13 School or Curriculum Leaders give me useful feedback about my team-teaching practice									
1.14 My team-teaching colleagues give me useful feedback about my team-teaching practice									
1.15 The teacher shortage affects the composition of teaching-teams									

Space

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.16 I have control over how my teaching space looks and feels									
1.17 The physical design of the teaching space I use is not suitable for team-teaching									
1.18 The acoustics in my teaching space support my use of team-teaching pedagogies									
1.19 I do not have enough teaching space to use different pedagogies and groupings									
1.20 I co-construct how I use the teaching space with my team-teaching colleagues									

Time

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.21 Collective non-contact time is sufficient to enable planning for team-teaching									
1.22 My school's timetable enables team-teaching by grouping students deliberately eg: blocking year levels/subjects									
1.23 My curriculum area does not spend enough time in meetings focusing on team-teaching									
1.24 I have enough non-contact time to co-construct how I will use my teaching space with my team-teaching colleagues									
1.25 School leaders protect our time so we can focus on planning and assessing with our team-teaching colleagues									

What other factors make it challenging for you to implement or practice team-teaching?

What ideas / solutions / changes might be made to address these?

Section 2 for TEACHERS AND HEADS OF DEPARTMENT / CURRICULUM LEADERS

Motivation to team-teach: for each of the following statements please indicate how true it is for you

Print display issue, please note that 1 = Not at all, 7 = Very much, with a 'Not Applicable' tick option.

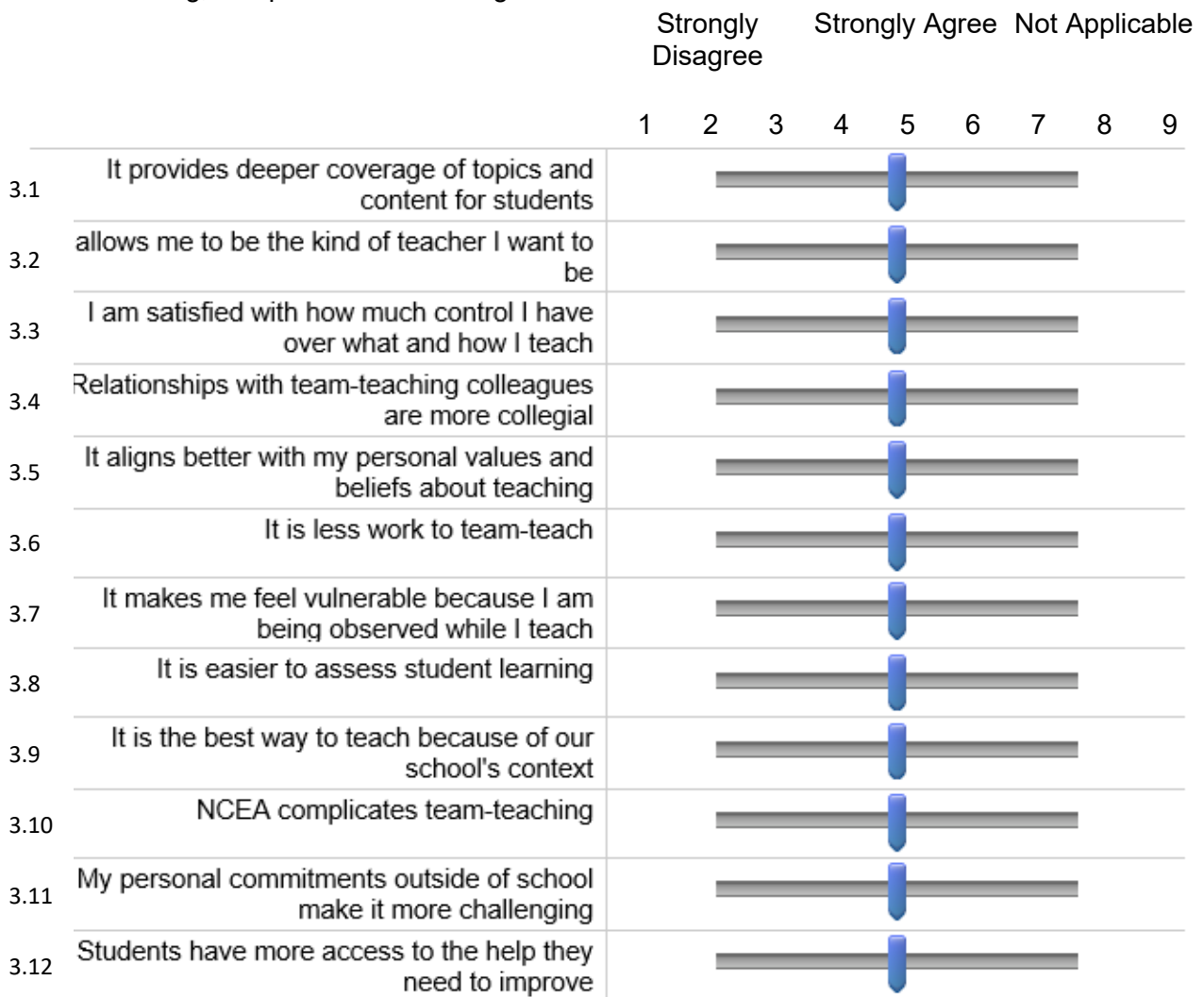
	Not at all	Somewhat	Very Much	Not Applicable			
	1	2	3	4	5	6	7
2.1 I enjoy team-teaching				4			
2.2 I feel confident about planning lessons for team-taught classes				4			
2.3 I feel like I am doing what I want to do when I am team-teaching				4			
2.4 I feel tense when team-teaching				4			
2.5 I feel competent when participating in team-teaching (delivering lessons)				4			
2.6 I am anxious about team-teaching				4			
2.7 I find team-teaching fun				4			
2.8 I feel that it is my choice to team-teach				4			
2.9 I feel like I have to team-teach				4			
2.10 I have control over subject content and delivery when I'm team-teaching				4			
2. 11 There's no pressure for me to team-teach if I don't want to				4			
2.12 I am satisfied with my performance as a team-teacher				4			












What do you find most interesting / engaging about team-teaching?

What do you find most challenging about team-teaching?

Section 3 for TEACHERS AND HEADS OF DEPARTMENT / CURRICULUM LEADERS

Please rate your agreement with each of the following statements about your beliefs about team-teaching, compared with teaching as an individual teacher



3.13 When I have synergy with a colleague it makes team-teaching easy	
3.14 I have to put in more effort into relationships with my colleagues but it is worth it	
3.15 For the majority of my students, it is better for their wellbeing (welfare)	
3.16 It provides my students with better opportunities to learn and achieve	
3.17 It requires particular competencies that some teachers don't have	
3.18 It provides greater choice for students	
3.19 If a teacher isn't committed to the philosophy, it affects everyone	
3.20 It is supported and valued by my school leaders	
3.21 The teacher shortage makes it harder	
3.22 Individual attitudes play a role in making it successful	
3.23 It aligns with my school's beliefs about learning	

TEACHERS ONLY:

What would you like your HoD / Curriculum Leader to do more or less of?

What professional learning do you think would most support your team-teaching? Choose up to 4

- Observations by colleagues that provide feedback (4)
- Observations of colleagues (5)
- Observations by HOD/Curriculum leader (6)
- Support to manage relationships with colleagues (7)
- Support to develop systems to track student learning (9)
- Exposure to different pedagogies appropriate for team-teaching (10)
- Support to manage student behaviour (11)
- More theory about team-teaching (12)
- Support to use spatial pedagogies (space & environment) (14)
- PL from within my school (15)
- External PL about team-teaching or ILEs delivered in my school (16)
- External PL about team-teaching or ILEs delivered digitally (17)
- Attend external conferences or workshops (18)
- Other (19) _____

Do you have any other comments you'd like to make about team-teaching?

HOD Section 1

What do you understand by the phrase 'team-teaching'?

The following statements seek your opinion about implementing and practicing team-teaching.

Leadership

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.1 I support my teachers to team-teach									
1.2 Senior Leaders in my school support me to lead team-teaching									
1.3 My school's philosophy does not support and promote team-teaching									
1.4 I support teachers in my learning area to manage student behaviour									
1.5 I work with team-teachers to develop their inter-personal relationships									
1.6 I seek the opinion of my teachers about which teachers they might work well with									
1.7 I work with the timetabler to group specific teachers together to form effective teams									

Professional Learning

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.8 I have been supported with professional learning time to develop the knowledge and skills I need to team-teach effectively									
1.9 My school provides access to ongoing Professional Learning to develop teachers' use of team-teaching pedagogies									
1.10 I support my teachers to develop the knowledge and skills they need to use open learning spaces for team-teaching									
1.11 I have not been able to access helpful specialist advice outside of the school about team-teaching									
1.12 I have been able to access a helpful network of middle managers/leaders outside of my school who are leading team-teaching									
1.13 We have not had enough opportunities to explore deeper ideas that underpin team-teaching pedagogies									
1.14 My school leaders have enabled me to develop the knowledge and skills I need to support my teachers to use open learning spaces for team-teaching									






Professional Relationships

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.15 By observing team-teaching in my learning area I have been challenged to rethink some of my assumptions about what good teaching looks like									
1.16 School or Curriculum Leaders give me useful feedback about my leadership of team-teaching practice									
1.17 School or Curriculum Leaders give me useful feedback about my team-teaching practice									
1.18 Teachers in my learning area give me useful feedback about my leadership of team-teaching practice									
1.19 The teacher shortage affects the composition of teaching-teams									

40 Space

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.20 The acoustics in our teaching space support the use of team-teaching pedagogies									
1.21 The physical design of our teaching space is not suitable for team-teaching									
1.22 Teachers have control over how the teaching space looks and feels									
1.23 Teachers do not have enough teaching space to use different pedagogies and groupings									
1.24 Teachers co-construct how they use the teaching space with their team-teaching colleagues									

Time

	Strongly Disagree	Strongly Agree	Not Applicable						
	1	2	3	4	5	6	7	8	9
1.25 Collective non-contact time is sufficient to enable planning for team-teaching									
1.26 My school's timetable enables team-teaching by grouping students deliberately eg: blocking year levels/subjects									
1.27 My curriculum area does not spend enough time in meetings focusing on team-teaching									
1.28 Teachers have enough non-contact time to co-construct how they will use the teaching space with team-teaching colleagues									
1.29 School leaders protect our time so we can focus on planning and assessing with our team-teaching colleagues									

What other factors make it challenging for teachers to implement or practice team-teaching?

What ideas / solutions / changes might be made to address these?

As an HoD / Curriculum leader, what support might help you lead team-teaching more effectively?

What are one or two things Senior Leaders might do to make team-teaching work more effectively for teachers?

What professional learning do you think would most support your teachers?

Do you have any other comments you'd like to make about team-teaching?

Demographics for TEACHERS AND HEADS OF DEPARTMENTS

The following section asks demographic questions to provide background information about participants.

Which learning area(s) do you currently teach? (Please tick all that apply)

- English (including Literacy and ESOL) (1)
- Social Sciences (2)
- Other (3) _____

Which year levels are you teaching this year? (Please tick all that apply)

- Year 9 (1)
- Year 10 (2)
- Year 11 (3)
- Year 12 (4)
- Year 13 (5)
- Other (6) _____

What classes have you team-taught, or are currently team-teaching? (Please tick all that apply)

- Some junior classes (years 9 - 10) (1)
- Some senior classes (years 11 - 13) (2)
- Have previously team-taught either junior and senior classes (3)
- Have never team-taught but other teachers in my learning area are team-teaching (4)
- Have never team-taught but other teachers in my school are team-teaching (5)
- Have never team-taught but we talk about doing it as a learning area / school (6)
- Other (7) _____

This year, what are your roles in the school? (Please tick all that apply)

- Class/subject teacher (1)
- HoLA / HoD / Curriculum Leader (2)
- Dean (3)
- AP/DP (4)
- Specialist Classroom Teacher (SCT) (5)
- Across School teacher for a Community of Learning (Kahui Ako) (6)
- Within School teacher for a Community of Learning (Kahui Ako) (7)
- Other (8) _____

How would you describe your position? (Please tick one)

- Permanent (1)
- Fixed term for less than one year (2)
- Fixed term for one year (3)
- Fixed term for longer than one year (4)
- Relieving for an absent teacher (5)

Approximately how many hours a week do you spend on your work outside the times when students are required to be at school?

- 0 (1)
- 1 - 6 (2)
- 7 - 10 (3)
- 11 - 15 (4)
- 16 - 20 (5)
- 21 - 25 (6)
- 26 - 30 (7)
- 30+ (8)

Approximately how many years have you been teaching?

- 0-2 (1)
- 3-5 (2)
- 6 - 10 (3)
- 11 - 15 (4)
- 16 - 24 (5)
- 25+ (6)



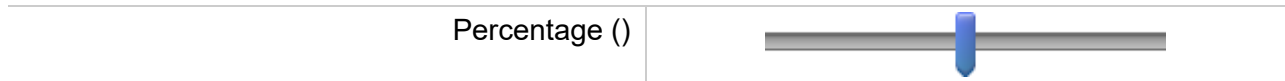
How many years have you been teaching in New Zealand schools, in total?

Is your school designed to accommodate...

- Fewer than 600 students (1)
- Between 600 and 1200 students (2)
- More than 1200 Students (3)

Current School roll. Please indicated how close to capacity your school is

0 25 50 75 100



Phase One – responses to semi-structured interviews

Codebook – 1st and 2nd cycle coding leading to emerging themes

1 st Cycle: Structural	2 nd Cycle: Pattern	No. of Participants	No. of Comments	Emerging Themes
Definitions of team-teaching		3	9	
External Factors				
	School Leadership			
PLD received		0	0	
PLD required				
Curriculum & Pedagogy		2	11	PLD was limited or non-existent, but teachers want it
Socio-Emotional		1	3	
Recruitment		1	1	
School philosophy		2	5	School philosophy could support teachers
	Space			
Space not supporting teaching and learning		3	21	Space was widely viewed as hindering team-teaching practice and student learning and safety because of overcrowding, noise and quality of facilities
Space supporting teaching and learning		3	6	Space supported the use of workshops with groups of students
	Time			

1 st Cycle: Structural	2 nd Cycle: Pattern	No. of Participants	No. of Comments	Emerging Themes	
Managing relationships with staff		3	14	Managing teacher/teacher relationships is very time consuming	
Planning		3	17	Finding time to co-operatively plan hinders team-teaching practice	
Use of time		1	7		
HoDs support implementation					
Consciously develop teams		2	2		
Consciously using space		1	2		
Developing teacher emotional competencies		1	1		
HoD competencies		1	2		
Teacher cooperation and commitment		0	0		
Timetable		3	9	The school's timetable affects the development of effective teams	
HoDs support practice					
Bolstering staff morale		0	0		
Budgets		0	0		
Curriculum		1	9		
Managing teacher relationships		1	1		
Pedagogy		3	19	Support with team-teaching pedagogy was viewed as desirable	

1 st Cycle: Structural	2 nd Cycle: Pattern	No. of Participants	No. of Comments	Emerging Themes	
Providing feedback on teaching		0	0		
Student behaviour		1	4		
Technology		0	0		
ILE Context					
Context teachers working in		3	4		
Definitions of ILEs		3	7		
Trad vs ILE		3	6	Teachers identified benefits associated with traditional classrooms vs ILE spaces	
Students					
Benefits to student learning		2	13	Team-teaching provides benefits to student learning as it provides more autonomy and choice	
Impact on students - negative		3	14	Team-teaching can impact negatively on students as it lessens the strength of teacher/learner relationship and some students can slip through the cracks	
Managing relationships with students		1	1		
Monitoring student learning		2	6	It can be difficult to monitor student learning	
Teachers influence implementation					
Teachers influence practice					

1 st Cycle: Structural	2 nd Cycle: Pattern	No. of Participants	No. of Comments	Emerging Themes	
Autonomy and ownership		3	4		
Competencies		0	0		
Adaptability		2	3		
Admitting weakness		3	7	Team-teaching can affect one's belief in their own competence	
Commitment		2	2	It is hard to be honest about the difficulties	
Dynamics		2	4		
Self worth		1	2		
Suitability		3	4		
Enjoyment		3	15	Team-teaching can be very enjoyable	
Personal philosophy		2	10	Team-teaching aligns with personal philosophy about education	
Professional relationships negatives		3	10	Team-teaching relationships can increase stress levels, particularly when work is not shared equally	
Professional relationships positives		2	6	Team-teaching relationships can be exciting and dynamic if teachers are supporting each other by contributing equally	
Teachers supporting each other					
Delivering curriculum		1	1		

1 st Cycle: Structural	2 nd Cycle: Pattern	No. of Participants	No. of Comments	Emerging Themes	
Peer feedback		3	3		
Peer observation		1	1		
Student behaviour		3	5	Student behaviour is harder to manage when team-teaching in an ILE	
Teachers supporting self		1	1		
Developing own practice		0	0		
Student behaviour		2	5	Teachers need to manage behaviour collaboratively when working in teams	
Workload		3	9	Team-teaching increases workload	

Example of qualitative data taxonomy – 1st cycle of coding for Early Career teacher responses.

Phase two: Section one of the questionnaire

Teacher	What other factors make it challenging for you to implement or practice team-teaching?	position	Additional work hours	career stage
A		Fixed term for one year	1-6 hours	Early 0-4 years
B	lack of subject expertise - not having a maths teacher in team yet being expected to teach maths, for example. Also very different pedagogical styles and behaviour expectations etc. that do not match.	Permanent	30+ hours	Early 0-4 years
C	Timetabling and non contact time not aligning with co-teacher to work on planning or marking assessments etc. Also I don't have a say in the pair-up that I end up in. I just get told that I have been paired with a certain teacher and we have to think up of ideas for a course.	Permanent	7-10 hours	Early 0-4 years
D	Lack of planning time as a team--we all have different non contacts and schedules, so it is hard to coordinate. I am also working in a team who has never team-taught before, so it has been a lot of trial and error.	Permanent	11-15 hours	Early 0-4 years
E	Differences of character, or time to be together to plan.	Fixed term for one year	11-15 hours	Early 0-4 years
F		Fixed term for one year	16-20 hours	Early 0-4 years
G	It is often hard to meet with co-teacher due to different timetables	Permanent	1-6 hours	Early 0-4 years
H	Timetable clashes, no no-contact time dedicated to team teaching	Fixed term for one year	16-20 hours	Early 0-4 years
I	Being a beginning teacher. Only being 1 year fixed term	Fixed term for one year	16-20 hours	Early 0-4 years
J		Permanent	7-10 hours	Early 0-4 years

K	Last-minute changes to a lesson. Not always being able to communicate face to face. Being involved in several teaching teams, so ways of being change from team to team.	Permanent	30+ hours	Early 0-4 years
L	Poor behaviour management, lack of streaming in classes and too many diverse learning needs, lack of subject knowledge in other subjects, lack of confidence, inconsistent expectations	Permanent	25-30 hours	1
M	The amount of students in one class can make it difficult to support them all in the various ways they need as well as manage behavior.	Permanent	25-30 hours	1
N	I struggle when I am expected to team teach with staff members that do not align with my own core values, share the workload equally and seem to struggle to form a professional teaching and learning relationships with staff and students.	Fixed term for one year	7-10 hours	1

Guide to code stripes:

1 Space a) capacity b) noise c) flexibility

2 Skill level of teachers (subject specific)

3 Time a) support others b) planning & marking
c) admin load incl meetings d) multiple teams
e) communication

4 Team composition a) different personalities b) different teaching styles
c) different expectations of students
d) pressure on teams to perform f) communication styles
e) forming strong, effective teams

5 Expectations from leaders a) pressure to produce new courses
b) pressure to upskill as a team-teacher
c) pressure to be adaptable d) pressure to perform

6 The timetable affecting non-contact alignment

7 Class size & spread of ability (mixed ability)

8 Having a say over team composition

9 Other incl. career stage, job security, assessment pressure

PHASE ONE: Demographic data

Table A

Summary of demographic data for interview participants in Phase One

School	Role	Years teaching	Currently team-teaching	Experience team-teaching within own subject	Experience team-teaching across curricula	Experience teaching in ILE	Experience teaching in Traditional school environment
School one	Head of English	11	N	Y	N	Y	Y
	Teacher of English	25+	Y	Y	Y	Y	Y
	Teacher of English	3	Y	Y	N	Y	Y
School two	Head of Social Science and DiT	15	Y	N	Y	Y	Y
	Head of English	11	Y	Y	Y	Y	Y
	Teacher of English and Social Science	4	Y	N	Y	Y	Y

PHASE TWO: Demographic data

Table B

Summary of Teacher and HoD demographic data for Phase Two

Demographic category	Multiple choice option	Percentage of teacher participants <i>n</i> = 36	Percentage of HoD participants <i>n</i> = 6
Main Teaching Area	English	78%	67%
	Social Sciences	22%	33%
Teaching across multiple Learning Areas	Maths, Technology, Digital technology, Art, Wellbeing	11%	35%
Years teaching	0-2 years	16%	-
	3-5 years	22%	-
	6-10 years	17%	17%
	11-15 years	17%	17%
	16-24 years	14%	33%
	25+ years	14%	33%
Position	Permanent	78%	83%
	Fixed Term one year	16%	17%
	Fixed Term more than one year	6%	-
Additional role in school	None	71%	49%
	Dean	5%	17%
	Specialist Classroom Teacher ¹	5%	17%
	Across Schools Teacher ²	8%	-

¹ A 'Specialist Classroom Teacher' has more than five years of classroom experience who receives additional time release and money to support teacher development and assist with professional learning and development at a school-wide level.

² An 'Across Schools Teacher' is a main scale, fulltime teacher who supports student achievement by working as part of a Community Learning to lead teaching and develop leadership practice. They receive .40 time release and four management units.

	Within Schools Teacher ³	8%	17%
	Principal's Nominee	3%	-
School capacity	0-599 student capacity	0%	33%
	600-1200 student capacity	73%	50%
	Over1200 student capacity	27%	17%
Current school roll % of maximum capacity *(student population)	50% full	8%	17%
	75% full	46%	33%
	100% full	40%	50%
	Missing / Not Applicable	6%	17%
Year levels teaching	Mostly junior ⁴	14%	33%
	Mostly senior ⁵	24%	-
	A mix of senior and junior	62%	67%
Classes currently team-teaching or have team-taught in the past	Mostly junior	35%	17%
	Mostly senior	14%	-
	A mix of senior and junior	46%	83%
	Others are team-teaching	3%	-
	Missing or Not Applicable	3%	-
Hours of work outside of school hours	1-6 hours	14%	-
	7-10 hours	19%	17%
	11-15 hours	24%	66%
	16-20 hours	19%	-
	21-25	5%	17%
	26-30	8%	-
	30+	11%	-

³ A 'Within Schools Teacher' is a fulltime, main scale teacher who receives a time allowance to work as part of a Community of Learning within a school, to develop teacher practice and support student achievement.

⁴ In New Zealand secondary schools 'Junior' students are in years 9 & 10, aged between 12 – 15 years.

⁵ In New Zealand secondary schools 'Senior' students are in years 11 – 13, aged between 15 – 18 years.

Phase one: Teachers' beliefs about factors that influence the implementation and practice of team-teaching

A summary table of teachers' beliefs about the factors influencing team-teaching is presented on p. 36.

Category One: The impact of team-teaching on students

All teachers interviewed were concerned about their students' learning, achievement and wellbeing. This was caused by using team-teaching pedagogies where students were expected to work independently with less direct teaching under the guidance of two or more teachers, and space, which enabled some students to distance themselves from the teacher's scrutiny. Teacher A proposed that *"I think for students that are less motivated they struggle with self-management, I think sometimes they can fall between the cracks a little"*. In some instances teachers' concerns about the impact of team-teaching on students caused them to question their own enjoyment of teaching.

"Being able to have those really good conversations, it's about having those sort of 'light-bulb' moments. It's kind of like those are taken away. I feel I don't have them as regularly in this context as I did in my old school."

Teacher C

"One thing I didn't like was that you, kind of, don't get to know your students as well."

Teacher B

Each teacher discussed the benefits of traditional classrooms. Teacher C highlighted the contrast of individual teaching compared with team-teaching, *"I feel like it's a little bit more superficial and it goes, kind of leans towards... context and content rather than skills and it might just be that I'm inexperienced in an ILE environment."* However, within this emerging theme, all three teachers interviewed recognised benefits to team-teaching, which included group and collaborative work. The use of workshops was discussed by the three teachers along with the ability to 'reach' more students who needed help in each lesson. Their thoughts are summarised by Teacher A: *"You can ability group them better when you've got two teachers, it just seems to work better, that you get through them."*

Teachers' responses in the interviews indicated that they perceived benefits to student learning, particularly for developing their engagement in learning and their socio-emotional relationships with other students. Additionally, 'agency' and 'choice' were identified by all three teachers as advantages offered by team-teaching, in that team-teaching provided more opportunities for students to select content, texts or contexts that interested them, along with the opportunity to align themselves with the teacher they preferred.

Category Two: The influence teachers can have on their own practice

A key finding from all three teachers was the influence they held over their own team-teaching practice. An emerging theme focused on teacher/teacher interactions, and the role personal dispositions towards team-teaching played in supporting team-teaching practice. Despite the different levels of professional experience, all three teachers indicated that early-career teachers were critical of their ability to manage the increased demands of inter-personal relationships created by team-teaching. However, this was often counterbalanced by their belief that team-teaching could be rewarding and enjoyable, when it aligned with their philosophy about teaching. It was evident for all three teachers who were interviewed in phase one, but particularly the two early-career teachers, that the increased need for communication within teams could create tension and friction, if a shared level of commitment to planning and student management was lacking. The late-career teacher also noted this as a challenge observable for the early-career teachers in her school. The early-career teachers interviewed found it difficult to work with teachers who had different approaches to planning,

“I think the biggest thing is just being prepared really. I think that's kind of what let my team down the most. Unprepared or inconsistent team expectations.... It's often in the collaborative agreement but it's never actually followed through on.”

Teacher C

Both early-career teachers focused on the impact of others' actions (such as a lack of planning) as an issue that they weren't sufficiently skilled to navigate, as illustrated by Teacher C *“Yeah I think that [not knowing how to manage relationships with team members] also leads to real feelings of inadequacy and incompetence as a teacher.”* Teacher B also experienced this, *“I was team-teaching with another colleague... and she... this was the only class she had. However, I just didn't feel like it was working very well.... She was quite busy. It was quite hard to find time to meet to actually do our planning.”* This teacher went on to explain the importance of shared commitment towards planning as a challenge she needed to overcome *“by being reflective”* if *“you don't want to end up resenting each other because you're doing more than the other, or that kind of thing.”* Additionally, Teacher C discussed the feeling of being unprepared due to other teachers' lack of commitment to planning as a negative influence on practice. This can place early-career teachers in a vulnerable position *“...having to pull [a 140-minute lesson] out of your backside”*.

The three teachers discussed different dispositions that positively influenced their team-teaching practice, which included open communication and a shared commitment to the philosophy of team-teaching. It was deemed important to their own practice that they were teaming with teachers who shared a similar philosophy, *“I think you've got to work with a staff member whose drive matches your own or [your] way of teaching, is going to complement you. I think it does matter who you team-teach with.”* In this instance, Teacher B's discussion moves the concept of team-teaching beyond just a pedagogical method of delivering content. Personality dispositions become an inherent part of the

team's ability to teach effectively and manage conflict that can emerge when working closely with others. This idea was supported by Teacher A, *"I realized, just, that it [team-teaching] has a lot of potential to go pear shaped if you're not really careful and really good at negotiating and apologizing and clarifying"*.

For the three teachers interviewed, conflict management was an important aspect of practicing team-teaching that required support. Their suggestions focused primarily on the need for additional co-operative planning time to directly address the challenges of working in a team, which will be discussed in the next section. However, the need for support with the socio-emotional aspects of teaming was identified, *"The hardest thing is dealing with... when you don't have a team that works well, and how you turn it around in a positive way. So it's not sort of accusatory or aggressive. Learning how to deal with difficult conversations would be quite handy"*. Teacher C's comment indicated an awareness of the need for support in the development of inter-personal dispositions that might help form more effective teams. The management of interpersonal relationships was not explicitly raised as an aspect lacking in the leadership of team-teaching, but as an area of potential professional learning to be addressed by the teachers themselves.

A primary influence over a teacher's ability to effectively team-teach was their commitment to the philosophy of team-teaching. However, this commitment may not overshadow issues caused by different values towards planning and preparation, as stated by Teacher B, *"You can't just turn up and say 'well, I want to do this'. The whole point of team-teaching is that you collaborate together. To come up with the best ways to deliver content. You know, bouncing those ideas around and each of us coming up with fantastic ways of doing things."* However, teachers' enjoyment of team-teaching was apparent, and the sense of collegiality, when there is the *"right mix of personalities"* (Teacher C) was cited by all three teachers as a primary cause for this. As Teacher B stated, *"It's [team-teaching] really fun... it's quite inspiring. And you also get to see someone in front of you as well. So that's quite cool from a more selfish perspective."*

Categories three and four: The effect of time and space on team-teaching practice

A key finding from all three teachers was that external factors such as time release and the design of their teaching space, controlled by school leaders and the Ministry of Education, were influential to both the implementation and practice of team-teaching. Teachers were critical of the impact of these external factors on their ability to execute effective practice. All three teachers indicated a feeling of there never being enough time for planning, as Teacher A describes it, *"we have to snatch all of our moments, they are truly snatched"*. Both early-career teachers discussed being *"back at square one"* (Teacher C) in their teaching, due to the need to incorporate new content and pedagogical approaches as a result of being in multiple teams. Teacher B discussed the difficulties of finding time to meet, *"Do you have release at the same time? When I have meetings, they're free, but when I'm free, they*

have meetings after school because they're in different teams and so it just starts to become a bit more complicated!” The complications caused by being in multiple teams was explored by Teacher B, who was, at that time, only teaching in one team, *“yes if I was to be doing that in four classes, just the actual keeping in contact with all of those different staff members would be really difficult... I’m not saying it would be impossible”*. This was furthered by the statement, *“Yeah, yeah, I’m not sure how it would work, but I’m sure it would be possible.”* Time was viewed as a factor influencing pedagogy and content development by Teacher C and Teacher A who stated, *“What influences the pedagogy of team-teaching is really just how much. Yeah a lot of it is around how much time you’ve got to plan together in order to explore all the different ways [to deliver lessons]”*.

The physical space teachers operated in, like time, had the power to dictate and drive pedagogy, *“Some of the spaces that you [we] have are not very appropriate for the kinds of teaching that you need to do in those spaces.”* This statement by Teacher B voiced the thoughts of the other two teachers. Additionally, the irony of working in spaces that should be flexible, but were not (due to class sizes, overcrowding and design) was mentioned by all three teachers, as a lack of breakout space severely limited their pedagogical options. The effect of space on students was also a factor influencing teacher pedagogical practice, as some activities became more appropriate than others, for example independent digital work, workshops and group work, rather than presentations by students, large group activities, discussions or direct instruction. Additionally, the physical impact on students, of aspects of the space, such as noise, was noted by all three teachers, and summarised by Teacher B, who commented that *“when we run our workshops it’s really noisy and there’s people walking past all the time, that might not [be] very conducive to focus.”*

Time and space were inherently connected by all three teachers as external factors that dictated much of their practice. They individually identified methods school leaders could employ to resolve issues relating to time, which included:

- Co-operative meeting times for teams
- Guaranteed one-hour meeting times specific to teams
- PL time allocated to learning how to work collaboratively in teams

The conscious manipulation of space was also viewed as a method to resolve time issues. This manipulation included ensuring teachers had the same non-contact times and were sharing office spaces to ensure collaboration could take place. The late-career teacher, Teacher A suggested the following idea for prioritising space allocation for teaching and learning,

“I guess it’s just about negotiating too. You know that’s part of what they [school leaders] need to do. Like perhaps, if your school has, if the philosophy of the school is that team-teaching is a valued way of teaching and learning, perhaps people who are choosing to teach together might have first dibs on what space they get within that learning community”.

In this school's context, only some teachers were team-teaching, therefore the suggestion of prioritising those teams' needs could be valid. However, in a school such as School Two where team-teaching is the only pedagogical approach (where the majority are team-teaching), this might be harder to arrange.

Phase one: HoDs' beliefs about factors that influence the implementation and practice of team-teaching

A summary table of HoDs' beliefs about the factors influencing team-teaching is presented on p. 37.

Category One: The influence teachers have on their own practice

Although the same categories emerged in the second cycle of coding the HoD and Teacher data sets, the interpretation of each factor's influence on the implementation and practice of team-teaching was different. An important finding from category one 'teachers' influence over their own team-teaching practice', was an emerging theme from the HoD group: Individual attitudes and dispositions play a major role in the success of team-teaching practice.

This theme incorporated several sub-themes that encapsulated aspects of teacher identity and an individual's motivation to undertake team-teaching. Teachers' individual beliefs and attitudes about team-teaching were viewed as important by HoDs in determining whether a team was successful. Individual teachers had the power to greatly affect dynamics as explained by HoD A, *"If they buy in and are positive, if they're normally used to working with people and enjoy working with people rather than by themselves, then that leads really well to a positive experience [of team-teaching]."* Each HoD had experienced or observed the difficulties caused when individual attitudes or personal dispositions were at odds with each other. HoD B's personal experience in team-teaching emphasized this, *"When personalities clash a bit [extended pause], I've been in some amazing teaching teams and I've been in some horrific teaching teams."* An individual teacher's commitment to the philosophy of team-teaching played a role in ensuring that team-teaching was effective. Each HoD discussed this, as summarised by HoD A, *"... if they are not fully committed to the idea of team teaching then that can really affect the team."*

Commitment, in conjunction with dynamics and the ability to be adaptable, were sub-themes that emerged as influential (see Table 4.4). The data indicated HoDs understood that team-teaching was reliant on the cooperative, flexible and committed nature of the individual teacher and their personal qualities that enable them to fit into a team. HoD B discussed this:

"Yeah, I just had a phenomenal team that I worked with last year and I just, I loved our planning meetings. I loved the class and we just used to bounce off each other. We could change tack with very little notice because the kids were kind of on something and we'd biff the lesson out the window and run with something else, and we just all knew each other so well and could play to each other's strengths, and then one of the other teams wasn't working so well so they swapped one of our people out for that person, and then the whole dynamic just changed. It was like, waaha."

Team dynamics were discussed by two HoDs, concurrent with recruitment issues due to the teacher shortage, which were cited as an issue in developing good teams. The issues of teachers taking a job because they needed one, rather than being personally committed to the philosophy was viewed as a threat to the practice of team-teaching. HoD C summarised this issue, *“It would come down to the staff employed, being really careful in the staff selection process, that they have an open mind and a flexible nature, and that growth mindset is really important, as opposed to hiring people just because they’ve applied.”* Commitment, enjoyment and competence were also discussed as factors over which individual teachers had control. The three HoDs talked about person/job fit, as HoD C explained, *“It’s not for every teacher, it’s not suitable for every teaching style. I think a lot of people would really struggle with it. And I think you’ll be hard [pressed] to push people into team teaching if they weren’t ready for it or open to it.”* It was recognised by the three HoDs that particular competencies were required for teachers to successfully work within teams. Their comments in other categories recognised that although external factors such as time allowance for planning, or space might influence team-teaching, that personal dispositions and commitment were influential factors for teachers.

Category Two: HoDs identify the ways they can support the practice of team-teaching

A finding from Category Two indicated areas that HoDs can and could support team-teaching practice. An emerging theme from the HoD group identified that HoDs viewed their main contribution to effective team-teaching as supporting teachers with pedagogy and curriculum content because that is what teachers explicitly ask for.

Although all three HoDs recognised the impact of teacher/teacher dynamics, and the role they could play in facilitating and strengthening team relationships, their answers to the question: *How can HoDs support the practice of team-teaching* indicated that the three HoDs believed that support with curriculum and pedagogy had more immediate impact on team-teaching. The three HoDs discussed support that included resource creation, unit development, direction-setting for assessment activities and ensuring that teams understood what broader curriculum goals they needed to achieve. It was recognised by all three HoDs that support with team-teaching pedagogies was harder to provide, and that there was a lack of professional learning about team-teaching at secondary level in ILEs. HoD A described it as a process of feeling one’s way through self-guided learning. *“I mean you read stuff and you try stuff but actually someone who’s an expert who comes in and says ‘here’s how you can do it’ or ‘here’s some things to think about’. We’ve never had anyone come to our school. Interesting.”* Professional Learning was viewed as emerging from meetings and visits to other ILE schools, rather than externally provided PL by ‘experts’. Each HoD recognised the role that peer observation could play in supporting team-teaching practice.

In School Two, professional learning often took place in meetings, to ensure that teachers were prepared and confident about delivering curriculum content in areas in which they did not have subject specialism. HoD C summarised the feelings teachers can have: *“It can be quite daunting for people... if they don't feel they're getting supported enough by leaders of learning, or heads of department... to be able to teach subjects or areas they're not as familiar with.”* This idea was furthered by discussing the importance of ensuring all curriculum areas that needed to be covered by the team, were covered evenly and the challenges of authentically integrating some subjects, such as Maths. The process of supporting teachers to help find authentic links between curriculum areas was viewed as an important part of the HoD role at School Two where all team-teaching was cross-curricula. HoD B described the teachers in her subject area as confident, but that teachers are “

inherent at reinventing the wheel when there's already really good material from previous years that they don't have to go verbatim. But they could look at it and get really, really good ideas, and they put their own flavour on it, rather than going ‘oh well, no, I don't want to use that person's work, I'll have to start all over again’.”

She furthered this by proposing that *“it's kind of a mindset with teachers about changing, changing the way that they are choosing to kind of view themselves, and view their work as actually okay to, to actually use other people's work, that's actually okay. That's actually a good thing.”*

The three HoDs all discussed ways that professional sharing implicit in team-teaching could lighten teachers' workload and viewed this as an aspect of supporting teacher practice that they could encourage to make team-teaching effective.

Categories Three and Four: The influence of external factors on implementing team-teaching

There was evidence amongst the HoDs that they viewed themselves as having little control over some aspects of implementation, as shown in Table 4.4. The school's timetable was identified as being a major influence on team-teaching. HoD A stated, *“... the school timetable is probably the single greatest impact on your [our] ability to be able to team-teach.”* The school's extended length 'blocks' of 100 minutes limited the number of lines available, which then restricted the HoDs ability to consciously group specific teachers into teams. HoD B agreed and stated, *“I firmly believe that getting the teaching teams and personalities right is really important as opposed to it fitting the timetable”*. However, she also stated that *“we always have to fit in with the timetable but sometimes it's actually at the severe detriment to the well-being of the collaborative team and therefore the quality of the teaching and learning that takes place.”* The timetable also impacted on cooperative release time, which was identified as a major factor limiting team-teaching.

The three HoDs recognised that much of their leadership of the implementation of team-teaching was affected by constraints caused by structural issues such as the timetable or the size of the school roll.

The school roll, which in both School One and Two was growing, was viewed as another factor that influenced the implementation of team-teaching. HoD A described it as a “*mathematical equation*”, in that as student numbers increased, the number of classes on each line would grow, leading to more opportunities to team-teach.

Another finding was a recognition of the role school leaders played in supporting and promoting the philosophy of team-teaching. For HoDs, this was an important aspect of ensuring that team-teaching could flourish. Two HoDs enthusiastically discussed their school’s philosophy and its role in guiding difficult decisions, conversations and mindset shifts in teachers who were struggling with aspects of team-teaching. HoD C could clearly articulate the school philosophy and the role it played in supporting teachers to innovate. HoD A stated “... *our whole ethos is to be quite progressive and try new things. So when you’ve got an idea, it’s not really the management or anyone like that holding you back.*” Each HoD believed that their school leaders supported and promoted team-teaching and viewed this as crucial to its successful implementation.

Phase two: Cronbach's Alpha results for Section One of the questionnaire

A discussion of these results can be found on p. 39.

Table C

Cronbach's Alpha (α) results for section one and items removed

Item no.	Subscale	α
1.1, 1.2 & 1.4	Support from school leaders	$\alpha = .75$
1.3 & 1.5	Support from school leaders	Removed
1.6, 1.7, 1.8, 1.10	Professional Learning	$\alpha = .86$
1.9	Professional Learning	Removed
1.11 – 1.14	Support from professional relationships	$\alpha = .80$
1.15	Support from professional relationships	Removed
1.16 – 1.20	ILE teaching space	$\alpha = .72$
1.21, 1.24 & 1.25	Time for team-teaching	$\alpha = .78$
1.22 & 1.23	Time for team-teaching	Removed

Table C shows the reliability alpha for the items included in the sub-scales for section one of the questionnaire. Items removed to increase internal consistency for the alpha calculation are also included in the table.

Phase Two: Summary of teachers' motivation to team-teach

Table D

Teachers' self-rated attitudes towards engaging in team-teaching

Aspect	Item and item number in questionnaire	Number responding from total population N = 36	Descriptive statistics
Enjoyment	I enjoy team-teaching (Q1)	$n=35$	$\bar{x}=5.60, \sigma=1.44$
	I find team-teaching fun (Q7)	$n=35$	$\bar{x}=5.43, \sigma=1.63$
Perceived Competence	I feel confident planning lessons for team-taught classes (Q2)	$n=35$	$\bar{x}=5.46, \sigma=1.50$
	I feel competent when participating in team-teaching (delivering lessons) (Q5)	$n=34$	$\bar{x}=5.76, \sigma=1.21$
	I am satisfied with my performance as a team-teacher (Q12)	$n=32$	$\bar{x}=5.06, \sigma=1.46$
Perceived Choice	I feel like I am doing what I want to do when I am team-teaching (Q3)	$n=36$	$\bar{x}=4.83, \sigma=1.58$
	I feel like I have to team-teach (Q9) Reverse Scored 'I don't feel like I have to team-teach'	$n=26$	$\bar{x}=3.81, \sigma=2.04$
	I have control over subject content and delivery when I'm team-teaching (Q10)	$n=35$	$\bar{x}=4.49, \sigma=1.65$
Pressure/tension	I feel tense when team-teaching (Q4)	$n=31$	$\bar{x}=5.00, \sigma=1.69$

	Reverse Scored ‘I don’t feel tense when team-teaching’		
	I am anxious about team-teaching (Q6) Reverse Scored ‘I am not anxious about team-teaching’	<i>n=31</i>	$\bar{x} = 5.45, \sigma = 1.71$
	I feel it is my choice to team-teach (Q8)	<i>n=30</i>	$\bar{x} = 4.60, \sigma = 1.92$
	There’s no pressure for me to team-teach if I don’t want to (Q11)	<i>n=27</i>	$\bar{x} = 3.78, \sigma = 2.01$

In the studies validating the *Intrinsic Motivation Inventory* (Ryan, Koestner and Deci, 1991; Deci, Eghrari, Patrick, & Leone, 1994), the ‘Enjoyment’ subscale is viewed as the self-report measure of intrinsic motivation. ‘Perceived Choice’ and ‘Perceived Competence’ are theorised as positive predictors of accurate self-report. The sub-scale ‘Pressure/tension’ is proposed as a negative predictor of intrinsic motivation. Initially, data were analysed by the coefficient alpha (α) calculation to measure reliability and internal consistency before scale scores were calculated. However, $\alpha = .844$ could not be considered a reliable estimate of internal consistency as only 18 of the 36 cases were included in the calculation due to missing data. Further analysis of the missing data across the whole Teacher data set using Little’s MCAR test, returned an inconclusive significance result of $p=1.000$, possibly due to the amount of data that were missing. Data were not missing due to a ‘Not Applicable’ response, rather, participants elected to not respond to the item. There was an observable pattern that emerged across the Motivation variables, indicating that the missing data related primarily to the following questions in Table E.

Table E
Response rates for 'Pressure/tension' items

Item	N = 36
Q4: I feel tense when team-teaching (RS)	<i>n</i> =31
Q6: I am anxious about team-teaching (RS)	<i>n</i> =31
Q8: I feel that it is my choice to team-teach	<i>n</i> =30
Q11: There's no pressure for me to team-teach if I don't want to	<i>n</i> =27

These questions were included to support the validity of the self-report measure of intrinsic motivation, measured through questions one and seven. The amount of missing data may therefore limit the overall validity of the self-reported motivation data measured by questions one and seven.

Descriptive statistics indicated that the participants had a high level of self-reported intrinsic motivation, measured by 'Enjoyment' questions one (\bar{x} = 5.60, *Mo* = 7) and seven (\bar{x} = 5.43, *Mo* = 6), both of which were negatively skewed, with no outliers. The Teacher group also indicated confidence in participating in various aspects of team-teaching, measured in 'Perceived Competence' questions two (\bar{x} = 5.46, *Mo* = 6), five (\bar{x} = 5.76, *Mo* = 6) and 12 (\bar{x} = 5.06, *Mo* = 6). Again, these data were negatively skewed. Fewer participants responded to the third item "I am satisfied with my performance as a team-teacher" *n* = 32.

The 'Perceived Choice' items indicated slightly lower levels of agreement than responses for 'Enjoyment' and 'Perceived Competence'. Question three (\bar{x} = 4.83, *Mo* = 5) indicated that participants felt 'somewhat' that they were doing what they wanted to do, when team-teaching. Question nine "I don't feel like I have to team-teach" had fewer respondents (72% response rate), with \bar{x} = 3.81 and *Mo* = 2. The distribution shown in Figure 4.1 shows variance about this aspect of 'Perceived Choice' indicating there may be clusters or groups of participants. Question ten measuring 'Perceived Choice' had a normal distribution in response to the item "I have control over subject content and delivery when I am teaching" with a slight negative skew and kurtosis.

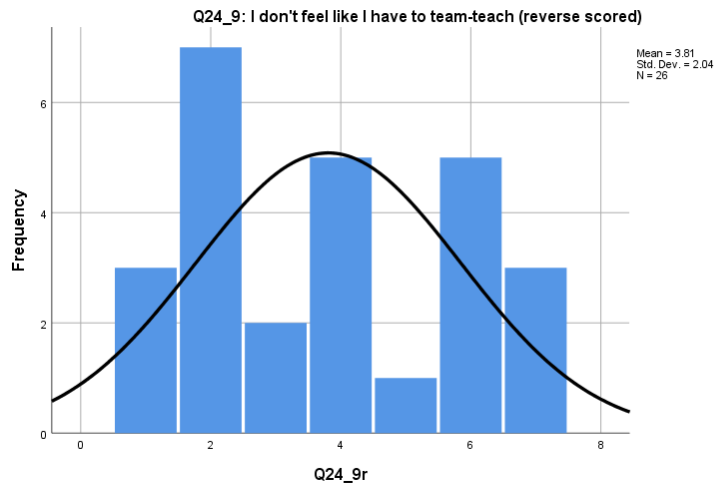


Figure A. *Distribution of Question 9 for 'Perceived Choice'.*

The 'Pressure/Tension' items had slightly lower response rates than most of the other items (excepting 'Perceived Choice' item two), shown in Table 4.10.

Question four indicated that the majority of participants who responded did not feel tense about team-teaching, as the data were left skewed with $Mo=6$. This finding was replicated for question six, as participants indicated that they did not feel anxious about team teaching ($Mo=7$). Participants indicated that they agreed that it was their choice to team-teach, with a slight left skew and $Mo=6$. The final item for Pressure/tension 'There's no pressure for me to team-teach if I don't want to' had a 75% response rate, with $\bar{x}=3.78$ and $Mo=2$, and a larger of $\sigma=2.01$ displayed in Figure 4.2 below. As with the distribution for the item 'I feel I have to team-teach' the plateau shape of the distribution may indicate that there are groups within the data who feel pressure to engage in team-teaching.

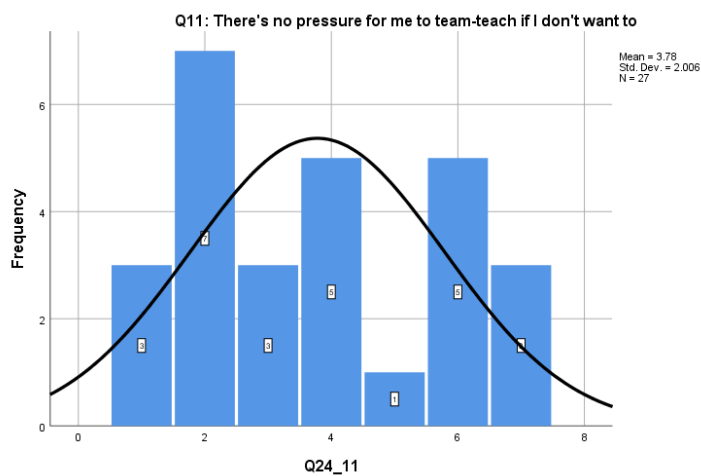


Figure B. *Participants self-rated attitude towards 'Pressure/tension item 11'*

