Factors that Sustain Curriculum Leaders in the Profession:
Perspectives of Secondary School Agricultural and Horticultural Science Teachers in New Zealand.

A thesis

submitted in partial fulfilment

of the requirements for the degree

of

Master of Educational Leadership

at

The University of Waikato

by

Coadette Low

THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

2023

Abstract

With the primary industries being of national significance to the New Zealand economy, it is experienced and passionate Agricultural and Horticultural Science teachers who are needed to engage, motivate, and inspire the next generation coming through. These teachers lead learning in and out of the classroom but are also actively involved in various leadership roles that have an impact on the subject. They are curriculum leaders. It is important to understand what factors motivate and sustain their professional work, and remain in the profession.

Through the positive lens of appreciative inquiry, a mixed-method approach was used with this research. Data collection was broken down into two phases. Phase One, an online questionnaire, which allowed for insight to be gathered from a wide range of respondents and Phase Two, semi-structured interviews which allowed for a deeper understanding through individual narratives.

The findings from this research highlighted that the main factors that sustain these curriculum leaders is the relational aspect with the students - being part of their successes, journey and inspiring them, but also the absolute relevance of the subject content. When starting out teaching the subject, a good support network, particularly a mentor, is critical for success. Continued support is crucial for ensuring that these curriculum leaders are supported throughout their journey, regardless of their career stage, and the support received will influence motivation, engagement, and job satisfaction. No career comes without challenges and constraints with the main ones being identified as the imbalanced ratio between workload and hours in the day, and curriculum perception from the senior leadership team and colleagues.

The senior leadership team has a large influence on school culture and job satisfaction and therefore retention rate. Those leaders who embrace transformational and relational leadership attributes develop trust relationships, support their staff, and allow teachers to have agency and autonomy to lead the curriculum within the subject. Strategies to address motivation and engagement in teachers are transferable, and therefore could be implemented across all curriculum areas.

Acknowledgements

My first thank you goes to the respondents who took the time to complete the online questionnaire. Your perspective given through the completion of this was very much appreciated. I would further like to acknowledge and thank those of you who expressed an interest in the semi-structured interview, and to the five who were randomly selected to participate, I thank you for sharing your narratives with me.

To my employer, Rathkeale College, I thank you for your encouragement over the past two years as I have embarked on this qualification journey. To my supervisors I thank you, Dr Rachel McNae for your expertise, and Dr Michele Morrison for your guidance and support in the last months. A huge thank you needs to go to my wonderful proof-reader, Shelley Hancox, I thank you for your time and effort.

Finally, I would like to acknowledge the support and love of my partner, family, and friends. I feel incredibly grateful to have had such an amazing and supportive cheer squad.

Table of Contents

List of Figures

List of Tables

Abbreviations

AHS – Agricultural and Horticultural Science

AI – Appreciative Inquiry

BOT - Board of Trustees

EOTC – Education Outside of the Classroom

HATA – Horticulture and Agriculture Teachers' Association of New Zealand

HOF – Head of Faculty

MOE – Ministry of Education

NZQA – New Zealand Qualifications Authority

PE – Physical Education

PPTA – Post Primary Teachers' Association

PD – Professional Development

SLT – Senior Leadership Team

Chapter 1
Introduction

The aim of this research was to gain insight into the factors that motivate and sustain the professional work of New Zealand Agricultural and Horticultural Science (AHS) curriculum leaders. Understanding what factors sustain these curriculum leaders, can provide insight into what could be done to increase the retention rate. This has implications for attracting and recruiting those looking at the curriculum teaching area as a profession of choice. Agriculture and Horticulture is a subject area of national significance and with experienced and passionate educators in the classroom, this will ultimately be of benefit to students and New Zealand in the future.

1.1 Background and Research Aim

In 2019 I was fortunate to be an Action Researcher for the International Boys Schools Coalition (IBSC) looking at Developing Agency: Boys Voice and Choice. My research question was '*How can a collaborative innovation task empower Year 10 Boys' self-efficacy?'.* Networking with fellow like-minded educators from around the world during this two-year experience sparked my interest in looking at what master's degree would best suit my passion, mindset, and future career aspirations.

As an AHS teacher of eleven years, I am a curriculum leader. Through inspiring others with a sense of purpose and engagement, whether that is students in the classroom or other teachers, and effective teacher is a curriculum leader (Al Barwani, 2018). I have worked in three schools, two in Australia and one in New Zealand. During this time, I have seen early and mid-career teachers leave the profession. Research often focuses on the reasons why teachers leave the profession for example, the work of Solomonson and Retallick (2018); Sorensen et al. (2017); Traini et al. (2021). There is a significant workload associated with teaching this subject due to its experiential nature through education outside of the classroom (EOTC) and practical sessions.

I cannot see myself leaving the profession. Yes, teaching has challenges, but from my perspective it is incredibly motivating and rewarding. My experience suggests that having a supportive network of family and friends who understand this is essential. Engaging in informal conversations with respected colleagues at various professional development (PD) opportunities and events has reinforced in my mind that their thinking and perspective was similar to mine. This led to me wanting to investigate what factors motivate and sustain the professional work of AHS curriculum leaders in New Zealand,

and their desire to remain in the profession, hence the research aim. Understanding the reasons and influences will not only be of benefit to those currently teaching, but for those either entering the profession or those switching to teach the subject, it will ultimately be of benefit to students.

1.2 Structure of the Thesis

This thesis has been organised into six chapters. Chapter two provides a review of literature that is related to teacher retention and attrition in general, then focuses on AHS teacher retention. Due to the small-scale nature of the subject, other 'like' subjects' retention of teachers for example, physical education (PE), were also reviewed for comparison. The review also looks at how school leadership can enhance the retention of secondary school teachers, and what can be done by leaders to retain teachers in this area. Chapter three outlines the methodology and research rationale. A mixed-methods approach using both quantitative and qualitative data collection, through appreciative inquiry, is described and justified. The data collection and analysis, including ethical considerations, are explained in this chapter. Chapter four provides an analysis of the findings from this research, and chapter five views and discusses the findings from both Phase One and Phase Two, drawing on the literature. Finally, in chapter six, implications and conclusions are made from the findings of this research. Limitations are considered, and implications of this study are explored with potential areas of future research being suggested.

Chapter 2
Literature Review

2.1 Introduction

The literature review begins by outlining the current global secondary teacher shortage, before delving deeper and looking at the research that has investigated the retention and attrition rates of secondary school teachers.

The second part of the review focuses on the curriculum area of Agricultural and Horticultural Science (AHS) teachers, first in globally and then specific to New Zealand. Due to the small cohort of AHS teachers in New Zealand, plus the limited research specifically looking at their retention, similar curriculum areas are examined to gain a further understanding of related challenges and opportunities.

The final part of the literature review discusses the influences of leadership on teacher retention, plus a focus on future solutions to ensure that current and future AHS curriculum leaders remain in the profession and continue to inspire, engage, and motivate New Zealand youth.

2.2 It is a Global Issue

With teaching being one of the most stressful professions (Gu, 2014), a shortage of secondary teachers is not a new issue, nor is it location specific (Brinck & Maher, n.d; Elliott et al., 2017; Gu, 2014; McConnell, 2017; Solomonson & Retallick, 2018; Sullivan et al., 2019). New Zealand as a country has one of the largest proportions in the OECD at 45.4% of secondary teachers older than 50 years old (Ministry of Education & Post-Primary Teachers' Association, 2016). In New Zealand, the overall demand for secondary teachers in the Ministry of Education (MOE) teacher supply forecast has dropped by 630 teachers, and even with the government funding announced in September 2022 to recruit overseas teachers the forecast still indicates a shortage of secondary teachers (Gerritsen, 2022). At the end of November 2022, there were 461 vacancies in the Education Gazette for secondary teachers. Close to one-third of schools surveyed reported that they had teachers working in subject areas outside their expertise (Schwanecke, 2022). While the COVID-19 pandemic has exacerbated the situation, a shortage of teachers is not a new thing in New Zealand. The Secondary Teacher Supply Working Group Report released in 2016, suggests that there will be a requirement for

2,200 teachers to join the profession every year for the next eight years (Ministry of Education & Post-Primary Teachers' Association, 2016). With secondary teacher shortages occurring in most Western countries, this further contributes to the shortage in New Zealand, as countries try to find ways to reduce their shortage to benefit their country through different recruitment and retention methods (Ministry of Education & Post-Primary Teachers' Association, 2016). Couillault (2022), who is the president of the secondary school principals' association of New Zealand, said that we need to be competitive if New Zealand is to address teacher shortages, as it is a competitive market internationally and those countries like Canada and Australia which are also palatable places to live, and with whom New Zealand is in direct competition regarding recruitment, opened their borders earlier. According to Solomonson and Retallick (2018), in the United States of America alone, to keep up with the current demand, 300,000 new teachers will be required annually over the next three years.

The supply shortage of teachers is two-fold, with a decline in those entering the profession, but also a high attrition rate. Attrition rates for the teaching profession do not differ considerably from those of other professions; however, the implications are significant (Buchanan et al., 2013). An experienced teacher are likely to be more competent than when they started their career, so retaining those highly competent and experienced curriculum leaders is crucial (Buchanan, 2010). Loss of these curriculum leaders results in a negative impact on student achievement through the loss of quality teaching and learning (Crutchfield, 2013; Eck et al., 2019), as they are often replaced by those who are initially less effective (Sims, 2020). This disruption in educational processes through teacher attrition can impact the wider school culture, and potentially reduce instructional continuity for the student (Kelchtermans, 2017).

2.2.1 Curriculum Hierarchy

Agricultural and Horticultural Science curriculum leaders are not alone in teaching what is often deemed a minority subject (Shoulders & Myers, 2011). Within most schools there is a curriculum hierarchy, with the assumption that some subjects are more valuable than others. Traditionally within the Western world, "mental labour is considered superior to manual labour" (Johns & Dimmock, 1999, p. 367), and such values have directly shaped the status of school subjects. School subjects differ in their degree of status not only within the school but the wider community (Grossman & Stodolsky, 1995). Within the traditional curriculum hierarchy, the most prestigious subjects are those that sit within the pure sciences and mathematics, followed by the applied sciences and humanities, with vocational education and physical education (PE) being seen as least prestigious

(Bleazby, 2015; Grossman & Stodolsky, 1995). For example, within the school environment, PE is often deemed of lower importance than other curriculum areas and not seen as an academic subject (Mäkelä et al., 2015). When this perception is embedded into the culture of the school, PE teachers tend to receive less support from their school, and the senior leadership team, which can lead to marginalisation and isolation that decreases job satisfaction (Lee, 2019; Mäkelä et al., 2015). Teachers need a supportive work culture to sustain their fulfilment of being valued and appreciated (Whipp & Salin, 2018). Bleazby (2015) argues that the higher status of some subjects is assumed to reflect their greater economic and social value, even though they have little direct relevance to everyday life, whereas vocational education is of a lower status, yet prepares students to fulfil essential jobs as there is a career pathway directly associated with the subject. As a consequence those subjects that are of higher status have access to greater resources and power within the school (Grossman & Stodolsky, 1995).

2.3 Teacher Retention

Retention of curriculum leaders is about keeping teachers teaching within the profession (Kelchtermans, 2017). With teacher retention being a global issue, retaining high quality and effective teachers is essential for the educational success of our youth (Ovenden-Hope et al., 2018). Motivation for staying within the profession can be broken down into three broad categories: intrinsic, altruistic, and extrinsic motivations (Anthony & Ord, 2008). Intrinsic motivation is being engaged in the practice because you find it rewarding, altruistic being the desire to help and your concern for others, and extrinsic being motivated by external reward (Song et al., 2020). In their work, Anthony and Ord (2008) found that intrinsic and altruistic reasons are the main motivations for teachers staying in the profession during the early and mid-career phases.

There has been an array of empirical research on the reasons why teachers stay within the profession, with more recent research focusing on identifying predictors of job satisfaction. Evidence suggests that if a teacher has increased job satisfaction, this will have a positive influence on them staying in the profession. Factors contributing to job satisfaction include working conditions, relationships with students, relationships with colleagues, autonomy, and professional growth and development (Adams et al., 2019; Booth et al., 2021; Bradley & Loadman, 2005; Gu, 2014; Rinke, 2011). When the above needs are satisfied, individuals are more likely to be motivated and engaged, and less likely to seek a change in their career to fulfil them (Sims, 2020; Skaalvik & Skaalvik, 2017). In Bradley and Loadman (2005) study, the professional factors of autonomy and subject matter were identified as having a large influence on satisfaction. Research by

Ponnock et al. (2018) found that secondary teachers were motivated by their passion for the subject and content that they teach, with Brunetti (2001) and Shoulders and Myers (2011) echoing this. Alongside this, the most common rewards cited by teachers for the reason they remain within the teaching profession, and what brings the most satisfaction, are working with students, watching them learn and grow, and helping them to achieve success (Adams et al., 2019; Bradley & Loadman, 2005; Perryman & Calvert, 2019; Rinke, 2011; Sorensen et al., 2014; Wronowski, 2018). It was Bradley and Loadman (2005) who reported the importance of teachers contributing to society. Successful and effective teachers give their students so much more than content knowledge; they build a relationship, provide support and have hopes for them (Wronowski, 2018). The ability and willingness to form a rapport and connections with students allows teachers to be successful (Bowling & Ball, 2020; Wronowski, 2018).

Rinke (2011) identified that teachers prioritise professional development (PD), students, and support as instrumental factors for their professional lives, with teachers wanting to work in a context that is supportive of their professional aims. Supporting this is Gu (2014), who acknowledges the relational nature of the teaching career and the importance of relationships in sustaining a teacher's wellbeing and commitment. Collegiality, efficacy and collaboration allow for authentic and trusting relationships to evolve. Adams et al. (2019) found that personal fulfilment was the most common theme for staying in the teaching profession.

Teaching sustainability is related to an individual's resilience and positively endure stressors (Elliott et al., 2017). The challenges, situations or tensions experienced can lead to a positive or negative impact on a teacher's professional identity. For early-career teachers, prior work and life experiences shape their sense of identity as a teacher (Anthony & Ord, 2008). It is the teacher's sense of identity that can influence their commitment and resilience (Perryman & Calvert, 2019). Teacher resilience is a quality that enables teachers to maintain a sense of moral purpose and commitment to the students they teach (Gu, 2014), and this relies on relationships formed.

A teacher's self-efficacy is correlated to their resilience, and therefore job satisfaction (Booth et al., 2021; Ellison et al., 2021). Increased self-efficacy has been associated with teacher wellbeing, which motivates teachers to engage in PD (Ellison et al., 2021). Interestingly, a large proportion of Booth et al. (2021) participants had considered leaving the teaching profession at some stage during their career. Teaching is stressful at times, and it is your network that will help you through, which ultimately benefits student outcomes as "success is rarely achieved yourself" (Harris, 2021, p. 39). Research by

Skaalvik and Skaalvik (2017) found that those who have a higher teacher self-efficacy tend to have less burnout and experience higher levels of personal accomplishment, commitment, and job satisfaction. Therefore, it is a teacher's sense of efficacy that influences their intention to stay in the teaching profession (Sass et al., 2011). It is since the early 2000s that teacher self-efficacy and retention in the profession has really been explored (McKim et al., 2017; Ovenden-Hope et al., 2018; Sass et al., 2011; Song et al., 2020). McKim et al. (2017) defined teacher self-efficacy as the "perceived ability to successfully accomplish a given task associated with teaching" (p. 284), and self-efficacy is an indicator of a teacher's professional identity (Gates et al., 2020). Teacher self-efficacy has been acknowledged to be an essential attribute to success within the classroom and school. Moreover, research has linked it to the ability to; engage and motivate students, innovate, reflect and evaluate teaching practice, manage and organise one's time and classroom, and educate challenging students (McKim et al., 2017). This ultimately influences job satisfaction (Flannery, 2019; Sass et al., 2011).

The study conducted by Suárez and Wright (2019) found that teacher retention was positively impacted by 2.137 times when principals had a good understanding of the curriculum area and/or previous teaching experience in that area. Adams et al. (2019) also found that those teachers that felt intellectually stimulated reported a greater job satisfaction, which positively links to teacher retention. There is evidence which establishes the association between salary and teacher retention, with higher salary differentials correlating with higher retention rates (McConnell, 2017). An influence on attrition is that a higher salary can be earned by individuals if they leave the teaching profession and work in industry (McConnell, 2017), in a variety of career alternatives (Rinke, 2011).

Van der Vyver et al. (2020) found that a principal who is nurturing in their leadership will have a positive influence on their teachers' professional wellbeing, whilst a lack of professional and administrative support will have a negative influence (Heineke et al., 2014). Kelchtermans (2017) suggests that it is the students, colleagues and principals who can create and foster the most supportive working conditions, as well as the most destructive. This relates to the notion, structural vulnerability, meaning teachers have no or minimal control over their working conditions which impacts on their practice (Kelchtermans, 2017). Yet, it is working conditions that directly affect job satisfaction, with school leadership practices being the strongest determinant of this (Ansley et al., 2019). Literature suggests that leaders who display a more transformational leadership style will promote a more positive culture and working conditions within the school (Ladd, 2011). It has only been within the last decade that educational research has started to

piece together characteristics of schools, and their leaders, that try to mitigate and protect teachers from burnout by improving working conditions and job satisfaction, thereby reducing departure from that school, or the profession (Sims, 2020).

2.4 Teacher Attrition

Most research investigates the reason why teachers leave, not why they stay (Whipp & Salin, 2018). Teacher wellbeing, focusing on teacher burnout, has been at the centre of research for decades (Van der Vyver et al., 2020), with the emotional demands of teaching heavily associated with, and a contributing factor to, teacher burnout (Heineke et al., 2014; Lee, 2019; Whipp & Salin, 2018).

One of the most significant influences on student outcomes is the quality of the classroom teacher (Ovenden-Hope et al., 2018). Kelchtermans (2017) suggests that it is important that schools prevent good teachers from leaving the profession for the wrong reasons. Nguyen et al. (2020) and Geiger and Pivovarova (2018) both provide evidence that there is a higher turnover amongst science, STEM, and special education teachers. Suárez and Wright (2019) wrote that males had a higher attrition rate than females, either to leave for jobs with a higher salary or to move into senior leadership roles; however, Räsänen et al. (2020) suggests that differing life experiences between male and female teachers need to be taken into account when looking at retention. In New Zealand, overall attrition rates for secondary school teachers are low compared to other comparable countries; however, the area of concern is the retention of new teachers and middle leaders (Ministry of Education & Post-Primary Teachers' Association, 2016). The concern for the attrition rate of mid-career teachers is that they have a lot of experience, expertise, and responsibility but potentially lack opportunities for career progression. Often these teachers are overlooked in regard not only to the support they are given but also to engagement with developing professionally (Räsänen et al., 2020).

The research around attrition factors has focused mainly on novice teachers, or those in the early career phase (Solomonson & Retallick, 2018). Whilst evidence does support that the highest attrition rates occur within the first five years of teaching, Buchanan (2010) additionally suggests that those under 30 years, and over 50 years of age are the most likely to leave the profession, with Howes and Goodman-Delahunty (2015) echoing this. However, the concern should be with the growing number of experienced teachers leaving the profession during the mid-career phase (Solomonson & Retallick, 2018), as teachers who leave in this phase are not departing the profession due to the reality shock of teaching, but exiting for other reasons (Weinburgh, 2020). The research on mid-career

or late-career attrition rates is not as comprehensive as that in the early-career phase. Solomonson and Retallick (2018) suggest that the profession needs to start examining and evaluating job satisfaction factors and how they influence teachers to stay within the profession, with Van der Vyver et al. (2020) highlighting the need for research to look at teacher strengths, attributes and wellbeing. Teaching as a profession can be demanding and stressful throughout the three main phases of an individual's teaching career van der Want et al. (2018), and teachers have different coping mechanisms and mindsets when faced with challenges or stress (Van der Vyver et al., 2020).

Working conditions and salary are significant factors influencing attrition. These are factors that have been found to influence other qualified professions (Ministry of Education & Post-Primary Teachers' Association, 2016) and the teaching profession is no exception. The Ministry of Education and Post-Primary Teachers' Association (2016) have suggested that attrition rates in New Zealand are between 8 to 10%, with them being stable over the past decade, whereas Australian research has reported early career teacher attrition rates to range between 8% and 50% (Ovenden-Hope et al., 2018). Working conditions are often reported as major findings for the main reason influencing teacher attrition, with the literature frequently referring to, and citing, the working conditions as: school leadership, workplace relationships, salary and job design (Ansley et al., 2019; Gu, 2014; Heineke et al., 2014; Kelchtermans, 2017; Ovenden-Hope et al., 2018; Tran & Smith, 2020). Alongside working conditions, another major influence is the work-life balance of the teacher. A healthy work-life-balance is essential for an individual's wellbeing and overall job satisfaction. However, it was found by van der Want et al. (2018) whose research looked at how experienced curriculum leaders cope with everyday issues whilst maintaining their positive professional identity, that often the imbalance was just accepted as part of the job, and interestingly that the issue was not isolated to career phases but present throughout a teacher's career. It is the working conditions that affect a teacher's quality of work experience, or job satisfaction, which in turn impacts student achievement (Ansley et al., 2019). If negative job satisfaction is felt, this increases the probability that the teacher will leave the profession (Clark et al., 2014). A study by Ellison et al. (2021) found that 40% of Australian and Finnish PE teachers had a desire to leave the school due to job dissatisfaction.

Working conditions that are stressful may influence a teacher's self-efficacy and job satisfaction negatively (Perryman & Calvert, 2019). Mastery experiences and vicarious experiences, also known as social modelling, have been identified as the two strongest predictors of self-efficacy (Bandura, 1997). However, early-career teachers have limited mastery experiences on which to build their self-efficacy. For this reason, vicarious

experiences are the strongest self-efficacy predictor, where early-career teachers have a mentor and can observe modelling of behaviours (McKim et al., 2017). If early-career teachers believe that they cannot succeed as teachers, this will have an impact on them staying in the teaching profession (Ovenden-Hope et al., 2018); consequently, it is the teacher choosing to stay within the profession, who will develop a higher degree of self-efficacy through an increase in mastery experiences (Crutchfield, 2013). Self-efficacy is a motivational construct which affects both performance and motivation. It is through an individual's belief in their capacity to be successful which affects choice and persistence, therefore influencing a teacher's decision to stay in the profession (Bandura, 1997; Schunk & DiBenedetto, 2021).

Research by Perryman and Calvert (2019) found that workload was not the only issue, but also work environment, accountability, and autonomy. Many participants acknowledged that they could cope with the workload, but it was the lack of support and accountability culture that were the main reasons for those participants considering leaving the teaching profession. Even so, the single strongest predictor for teachers to leave the profession is lack of support from administrators and leadership (Buchanan, 2010; Geiger & Pivovarova, 2018; Gilman et al., 2012; Kelchtermans, 2017; Räsänen et al., 2020).

Studies on attrition of the general teaching force have indicated poor administrative support, poor salaries, workload, stress, student discipline, and lack of advancement in the job, as some of the leading factors to attrition (Geiger & Pivovarova, 2018; Howes & Goodman-Delahunty, 2015; Perryman & Calvert, 2019; Thobega, 2003; Tran & Smith, 2020; Weldon, 2018). McIntosh et al. (2018), Gilman et al. (2012) and Solomonson and Retallick (2018) in their research identified the factors of stress, burnout, work-family balance, self-efficacy, salary, lack of administrative support, student behaviour, heavy workload and working conditions, as factors leading to the teacher attrition issue. This is specifically notable within the AHS teaching profession and also emulates those found in the generalised secondary teaching profession. Elliott et al. (2017) points out that opportunities in the primary industries are vast and often have a better salary and working conditions, with fewer demands. However, it is important to remember that teachers may leave the classroom for a variety of reasons including migration to another school or region, retirement, to start a family, or a career progression within the education sector (Tran & Smith, 2020; Weldon, 2018).

Wronowski (2018) found that participants felt frustration with the increase in responsibilities both as an experienced teacher but also outside of the classroom.

Specifically, the encroachments on aspects of teaching that motivate and sustain them. As a teacher moves between teaching career phases, tensions around the work-life balance become more evident, with an increase in leadership and management responsibilities impacting not only their personal lives, but also their classroom effectiveness (Booth et al., 2021). Elliott et al. (2017) further pointed out that any addition of extracurricular responsibilities added to the balancing act between work and home. Research by Buchanan (2010) found that salary was not the most important influence for many of the participants; however, they noted that once you are at the top of teacher salary range the only way to increase your salary is to look at leadership and management positions. Kelchtermans (2017) supported this, explaining that the only career progression within teaching is moving vertically into school leadership, and with many teachers not seeking this traditional hierarchical lineage, opportunities for horizontal promotion, through diverse and individualised PD, are important. This allows for teacher growth and development through professional commitment which is positively related to teacher self-efficacy and reduced attrition rates (Räsänen et al., 2020), as it is the appreciation, respect and valuing of one's expertise that makes it feel like a promotion (Geiger & Pivovarova, 2018; Kelchtermans, 2017).

Teacher burnout has been linked to several workplace conditions including job satisfaction, student learning and teacher isolation (McKee, 2003). Workload is a contributor to attrition rates, and (Buchanan, 2010) concludes that even though there has been a decrease in class sizes, there has been a significantly larger increase in the complexity of classroom responsibilities. Burnout can be evidentially linked to workload; however, the stress increase from burnout due to a lack of fairness in work, top-down leadership practices, uneven distribution of rewards or being surrounded by ineffective teachers has a significant influence on effective and committed teachers burning out and leaving the profession (Croom, 2003; Räsänen et al., 2020; Wronowski, 2018). Many teachers report that the motivation to remain in the teaching profession is the sense of personal accomplishment that they experience when teaching students. As a consequence, teachers who experience a diminishment of personal accomplishment by the school's leadership team or the culture of the school, are more susceptible to burnout (Croom, 2003).

2.5 Agricultural and Horticultural Science Teaching Globally

Globally, AHS is viewed as a minority subject in many secondary schools (Shoulders & Myers, 2011). AHS curriculum leaders, like many other curriculum areas, facilitate and engage students in powerful experiential learning experiences (Lough, 2019; Sorensen

et al., 2016). Over the last decade, the shortage of qualified AHS teachers (Eck et al., 2019; McIntosh et al., 2018; Solomonson & Retallick, 2018) has prompted research into those who are entering, those who remain, and those intending to leave the profession (Gilman et al., 2012; Sorensen et al., 2016; Sorensen et al., 2017; Thieman et al., 2012; Traini et al., 2021).

Agricultural and Horticultural Science teachers work in a complex social landscape, with multiple stakeholders having different expectations of them as they build and maintain a comprehensive programme in and beyond the classroom (Traini et al., 2019; Traini et al., 2021). Torres (2008) suggests that AHS teachers have greater work demands than most secondary school teachers. Like PE teachers, AHS teachers have a wide range of duties that they undertake on top of their teaching role, for example management of resources and competition organisation, which may increase emotional demands (Lee, 2019) and makes the workload considerably more demanding than other curriculum areas. In a curriculum area heavily focused on experiential learning and founded on EOTC experience and practical sessions, there is significant additional workload. As the teaching programmes have evolved to meet changing school and societal demands, the requirement for AHS teachers to have a wider skill set and knowledge base has increased, as processing and marketing is also taught alongside production (Delnero & Weeks, 2000). Teaching outside of the classroom means that teachers need to comply with health and safety issues and manage the potential risks within their classes (Mäkelä et al., 2015). As expectations and job responsibilities continue to increase, teacher have less time available for other life roles (Lambert et al., 2011; Sorensen et al., 2016).

Agricultural and Horticultural Science teaching is a lifestyle, not just a career, which can make it difficult to ensure a work life balance due to EOTC commitments, and often being a single-person department within schools. In general, AHS teachers are satisfied with their careers; however, many still leave the profession (Clark et al., 2014; Solomonson & Retallick, 2018). There is little understanding about the ways in which secondary AHS teachers assume their roles and responsibilities, both in and out of the classroom (Traini et al., 2021). Interestingly, Solomonson and Retallick (2018) also found that whilst compensation was valued, participant's valued their time over money, as successes were experienced at school, but "at the expense of their personal lives" (p. 9). Rice et al. (2011) found that the top motivational factor to stay in the profession was having highly motivated students. Findings show that building rapport with students is important to all teachers, and therefore not exclusive to AHS teachers, as they see what they do as providing learning experiences that are worthwhile and of benefit to the students, with the best interests of the students being their purpose (Croom, 2003). Studies by Roberts

et al. (2007) and Eck et al. (2019) identified personal traits of an effective teacher which included internally motivated, passionate, knowledgeable, open-minded, enthusiastic, organised, and being caring and understanding. These findings were strongly supported by Roberts (2004) study which looked at personal qualities of effective Agricultural teachers. The job satisfaction that is experienced by teachers has a significant linear relationship with remaining within the profession (Gilman et al., 2012).

The role of an AHS teacher has a high degree of personal accomplishment (Croom, 2003), even though it is one that is intellectually, emotionally and at times physically demanding (Gilman et al., 2012; Shoulders & Toland, 2017). Research is consistent across the globe regarding the reasons why AHS teachers leave the profession: long hours, excessive expectations and demands, multiple responsibilities, lack of personal or family time, and unsupportive leadership (Clark et al., 2014; Lambert et al., 2011; Solomonson & Retallick, 2018; Sorensen et al., 2017; Torres, 2008; Traini et al., 2021). These challenges can have a negative influence on a teacher's self-efficacy (Clemons et al., 2021). As teachers gain more experience, their confidence grows, and they subsequently often develop coping skills that mitigate work stress (Croom, 2003). If they can maintain a high degree of self-efficacy, and personal accomplishment, this relates positively to attrition within the profession (Croom, 2003; McKim et al., 2017). Clemons et al. (2021) support this suggesting that intrinsic motivational factors were the greatest predictor of AHS teacher career longevity. Torres (2008) points out that teacher satisfaction was higher with intrinsic motivators, and lower with extrinsic. The study conducted by Solomonson and Retallick (2018) found that mid-career teachers found that they enjoyed the variety and high level of autonomy, but also the support and appreciation from stakeholders. Traini et al. (2021) echo that AHS teachers are more likely to stay in the profession if they have supportive management, parents, and communities.

Agricultural and Horticultural Science curriculum leaders are often described as possessing a high commitment to their work, and their students (Clemons et al., 2021). The blurring of work and home boundaries can cause a decrease in work-life-balance, with Sorensen et al. (2017) reporting that recent studies have shown a significant link between the decisions to remain within the profession. Elliott et al. (2017) specifically linked burnout of AHS teachers to the extra responsibilities that occur with teaching that subject. A study conducted by Crutchfield (2013) highlighted that mid-career phase AHS teachers are working to manage both their professional and also changing personal roles, as they come to the crossroads of making permanent decisions around their careers and family. A study conducted by Cano (1992) showed that male agriculture teachers had

more years teaching experience and held their current position longer than their female counterparts. There is conflicting evidence about gender differences, with Gilman et al. (2012) indicating that the potential sources of dissatisfaction could be different between the two genders, with females struggling with the work-family conflict. Whilst Sorensen et al. (2017) reported that “male and female teachers did not differ in work salience, nor was there a difference in the number of hours worked per week” (p. 225) and that both genders shared similar experiences of balancing work and family roles.

Professional development opportunities rate highly amongst all experience levels of AHS teachers (Roberts et al., 2020; Thobega, 2003; Wang et al., 2020), with the opportunities provided by industry greatly influencing a teacher’s engagement with, and commitment to remain in, the profession (Elliott et al., 2017). Booth et al. (2021) identified that a lack of relevant PD for mid-career teachers is a barrier to career progression and has a negative influence on those teachers staying in the profession. The complexities of the role mean that AHS teachers are a uniquely talented group who deliver a diverse set of programmes (Easterly III & Simpson, 2020). As a consequence, early-career teachers in particular often find PD from within the AHS teaching profession more beneficial (Thobega, 2003).

2.6 Agricultural and Horticultural Science Teaching in New Zealand

The significance of the primary industries to New Zealand has always been known; however, the recent COVID-19 pandemic has added weight to this. The 2022 budget released by the New Zealand government at the end of May affirmed that the primary industries are essential to the country’s future economic security (O'Connor et al., 2022). This multi-billion dollar sector incorporates science, business and IT disciplines across both the urban and rural environment (Rural News Group, 2014). In 2014 it was calculated that 50,000 more workers would be needed in the primary industries if New Zealand were to double its primary exports by 2025, and that half would need to be tertiary educated (Rural News Group, 2014). This reinforces the importance of the AHS curriculum in education. Generating passion and knowledge early in school students will have a large influence (Lough, 2019). Academic research conducted in New Zealand on the taught subject of AHS is limited, with Redpath (2018), Lough (2019) and Cloughley (2020) being the most recent. Kerry Allen who is a practicing AHS teacher and secretary of the Horticulture and Agriculture Teachers’ Association of New Zealand (HATA) also supplies information to government organisations on the AHS curriculum and also shortage of teachers (Allen, 2022a, 2022b).

With the New Zealand government acknowledging that there is a shortage of secondary school teachers (Brinck & Maher, n.d), the curriculum area of AHS is not an exception; if anything it is exacerbated. There are not enough teachers in the subject, and schools struggle to obtain well-qualified teachers, often meaning that those without a relevant undergraduate degree are recruited to teach this specialist subject (Allen, 2022b; Redpath & Allen, 2019). Another contributing factor in the supply shortage is that there are currently no Initial Teacher Education providers that offer AHS as a separate teaching specialisation (Lough, 2019). Combined with the potential of earning more within the primary industries, relevant degree undergraduates are not seeing AHS teaching as a career of choice (Allen, 2022b). With an ongoing shortage of qualified AHS teachers in New Zealand, understanding the challenges that they face is critical. The COVID-19 pandemic has further exacerbated the challenges faced by teachers (McKim et al., 2021) with teachers having limited opportunities to give contextualised instruction through authentic experiential learning and participation in EOTC. Keeping competent and experienced curriculum leaders would be of benefit to the students, but also New Zealand, particularly in a subject area of "national significance" (Hon. D. O'Connor, personal communication, April 22, 2021). Of New Zealand's 500 secondary schools, only 140 teach AHS (Allen, 2022a, 2022b). Within this subject, a variety of course options provided by each school allows the course to be adapted to best suit the cohort of the students and the region in which they reside (Redpath & Allen, 2019). The diverse nature of the subject matter encompasses all sectors within the primary industries (Easterly III & Simpson, 2020). There is a workforce shortage of AHS teacher supply, but also an aging workforce with the average age being 55 in New Zealand (Allen, 2022b).

Teacher support is crucial with the ever-changing nature of Agriculture and Horticulture in New Zealand, yet participating in PD and remaining current with changes occurring within the sector can be challenging. Teachers need to continue to meet the needs of their students through equipping them with up-to-date and relevant industry knowledge (Allen, 2022b; Lough, 2019; Roberts, 2004). There are limited curriculum specific textbooks for teachers to use due to continual changes within industry resulting in content regularly changing. Furthermore, this is a small but diverse curriculum area; covering all primary industries that have an economic significance to New Zealand, for example, dairy, apples, salmon, or forestry. For this reason it is not economically viable for publishers to publish books (Allen, 2022b). This can place extra pressure on the workload of AHS teachers, as they need to be on top of the content, resources, and resource-writing, which other curriculum areas do not require to the same extent.

Perception of the subject, and the practical aspect are significant additional challenges faced by New Zealand AHS curriculum leaders. This is due to it differing vastly from other subject areas (Allen, 2022b). The industry needs both academic students, and those that might seek a more practical pathway. This means that classes are mixed ability with a diverse range of learning needs which the teacher needs to accommodate to ensure success for all their students (Roberts, 2004). The stigma is being challenged that the subject is a 'dumping ground' for those students with learning and behavioural needs (Cloughley, 2020; Roberts et al., 2007). To add further diversification those students from an urban versus a rural background have different knowledge bases coming into the subject (Roberts et al., 2007). Research by Cloughley (2020) found that providing differentiated learning across a broad range of knowledge levels is challenging, which can negatively influence the teacher's perception of teacher effectiveness. The management of resources can include, for example, glasshouses, laboratories and livestock as well as taking trips off school site, that complement the curriculum's theory. Health and safety regulations for both on- and off-site activities require teachers to conduct risk assessments, adding to workload. Teaching outside the classroom environment arguably requires stronger classroom management skills (Allen, 2022b). However, it is flexibility of both theory and practical content, and autonomy that most AHS curriculum leaders thrive on (R. Newman, personal communication, March 22, 2022). The subject being taught allows students a pathway straight into industry, which means that despite the challenges, teaching AHS offers an exciting and rewarding career (Allen, 2022b).

The traditional progression in the education profession is to aim for a role within senior leadership. Research from both Booth et al. (2021) and Kelchtermans (2017) indicates that this vertical hierarchical career progression is not often sought by AHS teachers due to the potential impact on their presence and effectiveness within the classroom. It appears that AHS teachers are actively aligning and selecting additional roles that will have a positive impact on the subject, thus benefiting the students and other teachers (Roberts, 2017). Leading within the curriculum space for the benefit of others is an attribute of servant leadership (Humphreys, 2005) .

2.7 The Influence of Leadership on Teacher Retention

School leadership, and in turn school culture, has a significant impact on teacher retention (Ellison et al., 2021; Kelchtermans, 2017; Suárez & Wright, 2019). The teacher's perception of leadership is a well-established predictor of attitudes associated with their decision to remain within the profession (Urick, 2016). Research from Sims

(2020) provides evidence that the perception of leadership and management had the strongest association with the desire to move schools. It is the leadership of the school principal and the senior leadership team that directly influences teachers' professional wellbeing (Van der Vyver et al., 2020). One such leadership issue is the principal's effectiveness which has a direct result on teacher retention. More effective principals create a more positive school culture, and working conditions which in turn leads to greater job satisfaction (Grissom & Bartanen, 2019). Research by Ansley et al. (2019) provides additional evidence that teacher perceptions of the senior leadership team SLT influence their job satisfaction. Teachers who experience positive working conditions are more likely to continue teaching (Elliott et al., 2017) and "effective leadership appears to be a prerequisite to positive work contexts as, without it, educators cannot experience the conditions that allow them to be effective in their roles" (Ansley et al., 2019, p. 11).

Characteristics of positive working conditions include administrative support, time to complete responsibilities within the classroom, beneficial professional growth and development, fair evaluations, providing constructive feedback, allowing teacher autonomy, and instrumental support, for example, equipment and facilities (Ansley et al., 2019; Booth et al., 2021; Elliott et al., 2017; Grissom & Bartanen, 2019; Mäkelä et al., 2015). Teachers thrive with a sense of autonomy, and the role of a senior leadership team should be to look at the ways in which the school can support the teacher (Allen & Sims, 2018).

In its authentic form, transformational leadership boosts motivation, morale, and the performance of others (Bass & Riggio, 2006). It was Burns (1978) who first introduced the concept of transforming leadership (Bass, 1999), with Bass (1985) extending the paradigm to transformational leadership (Humphreys, 2005), however, it was Leithwood and his colleagues who then adapted it into the educational context (Hallinger, 2003). Transformational leadership seeks to generate indirect effects on student achievement. By creating conditions of trust, transparency, open communication, collaboration, and engagement in learning, team members become committed and self-motivated to work towards the improvement of the school, without direct instruction from those leading (Hallinger, 2003). By working with their teachers, a transformational leader increases and encourages the aspirations of those that follow which leads to a greater degree of satisfaction (Bass, 1999). Transformational leaders are those who encourage and inspire those around them, and who help develop leaders through empowering them (Bass & Riggio, 2006). The development of teachers as leaders by the SLT will create a positive culture by increasing morale through aligning the objectives and goals of the teachers to that of the school (Bass & Riggio, 2006). Transformational leadership has a strong direct

effect on the culture and conditions at the school, which ultimately impacts the conditions found in the classroom (Hallinger, 2003).

Given that school culture plays a pivotal role in teacher retention, principals are considered the driving force behind the culture of the school (Suárez & Wright, 2019). Both Gu (2014) and Allen and Sims (2018) suggested the need for strong leadership in creating and building a positive and collegial culture within the school. Van der Vyver et al. (2020) state: “Leadership style is a coherent approach used to motivate and manage teachers and handle grievances while maintaining relationships with teachers” (p. 90). The leadership style, or attributes displayed by the SLT, have an influence on the effectiveness of the leadership, and therefore the culture of the school. Research from Van der Vyver et al. (2020) suggests that teachers who see their principals displaying a more transformational approach potentially experience higher levels of professional wellbeing. In contrast, teachers experiencing lowered levels of professional wellbeing when the principal displayed more of the laissez-faire attributes of leadership. A bureaucratic leadership style has also shown a negative association with job satisfaction (Suárez & Wright, 2019).

Transformational leaders are far more likely to engage with teachers and promote collaboration, foster teacher development, and build trust and commitment, which are all contributing factors to the culture of a school, and therefore job satisfaction and professional wellbeing (Ladd, 2011). Strong leadership creates and builds a positive, collegial professional culture within the school (Gu, 2014), with Ladd (2011) reinforcing that the degree of collaboration and trust amongst teachers is closely linked to the culture within the school. A teaching staff that works collaboratively and cohesively will maintain positive relationships in a professional and collegial manner, increasing job satisfaction (Sims, 2020). Research from Ansley et al. (2019) echo that collegial support matters, finding significant correlation between satisfaction with workplace relationships and overall job satisfaction.

Principals can have a positive impact on job satisfaction through transparency of decisions, known expectations and requirements, and recognition of teacher work and accomplishments (Van der Vyver et al., 2020; Xenikou, 2017). Engagement in communication and consultation with teachers by the principal ensures that teachers feel that their opinions and insights are valued, and allows the rationale behind important decisions to be understood (Sims, 2020). Principals need to adopt a leadership style which incorporates a shared instructional leadership; for example, collaborative decision making, a sense of community, and principal instructional direction and support can have

a positive influence on teacher retention (Urick, 2016). Instructional leadership can positively influence the motivation, engagement, and amplify teacher capabilities (Bassett, 2016). Furthermore, it is the attributes of a supportive leader that directly impact a teacher's professional wellbeing. Within the hierarchical leadership of the school this role could be undertaken by the Head of Faculty (HOF). Fostering school-wide collaboration and providing opportunities for professional growth and development increase a teacher's self-efficacy (Sims, 2020; Suárez & Wright, 2019; Whipp & Salin, 2018).

It is through a commitment to a teachers professional and emotional growth, that a servant leader will strengthen the relationship positively (Stewart, 2012). The servant-leader listens, supports, and empowers. This is likely to have a positive impact on teachers' job satisfaction and the subsequent decision to stay within the profession (Sass et al., 2011). It is the support given from the senior leadership team of the school that is critical to the success of the teacher (Clark et al., 2014). Servant leaders value their teachers, through encouraging the teacher to lead within and beyond the classroom (Stewart, 2012). Thus, effective teachers value their students, and prioritise the fulfilment of their needs, rather than satisfying their personal needs (Canavesi A & Minelli E, 2021). Therefore, servant leadership is not dependent on a role, but an approach which is "on-going, enduring and transformational" (Crippen & Willows, 2019, p. 173). Servant leadership can influence professional satisfaction, and therefore increase motivation and engagement of the teacher (Huamán-Romaní, 2021).

2.8 Future Thinking

Effective teachers are curriculum leaders who inspire others with a sense of purpose and commitment (Al Barwani, 2018). Research shows that developing effective professional reflective practices contributes to effective professional self-efficacy (Ovenden-Hope et al., 2018) with curriculum leaders envisioning and guiding through a mentor role (Al Barwani, 2018). As such, keeping qualified teachers in these roles is important to mentor others, sustain curriculum knowledge and create partnerships with communities which ultimately is of benefit to students. Through the enabling of relationships and the commitment required for success, the mentor displays relational leadership attributes (Brower et al., 2000). Mentor teachers and leaders have an influential role in the careers of both early-career and mid-career phase teachers. Therefore, it is critical that mentors adjust their approaches to accelerate the development and capabilities of their mentee(Henning et al., 2018). In addition, the PD should be individualised to meet contextualised and personal needs (Booth et al., 2021). A study by Booth et al. (2021)

provided evidence that mid-career teachers rated PD as more important than indicated by those in their early or late career phase. Bradley and Loadman (2005) found that implementing teacher-mentoring programmes with early-career teachers had a positive influence on the rates of retention. Furthermore, Hasselquist and Graves (2020) found that mid-career teachers felt that they would not have been able to build and maintain an agricultural teaching programme without the support that they received from others.

Early in a teacher's career there should be support systems of reciprocal learning relationships within the school, but also within the curriculum area (Doney, 2013). FederiAova (2021) states that nearly 50% of teacher attrition occurs within the first five years of teaching. In New Zealand, the HATA actively seeks to partner up new teachers to the subject or those seeking additional support with an experienced mentor (Allen, 2022b). For early-career teachers, meeting their needs through support and guidance is needed to help retain these teachers and ensure a positive experience and career trajectory (Smalley & Smith, 2017). Well-designed and considered PD plans for teachers will be of benefit as they support communication, focus on the wants of that teacher, and encourage professional collaboration (Henning et al., 2018). Creating a supportive culture and environment for professional learning will have a positive influence on teacher retention; however, this needs to be provided throughout the entire career cycle (Kelchtermans, 2017). Interestingly, Allen and Sims (2018) found with early-career teachers that the school leaders thought they were being more supportive than what the mentee experienced.

Allen and Sims (2018) reported that a teacher who is teaching the top quarter of most supportive schools will gain 38% more expertise from the first ten years of teaching as they continue to see professional learning growth over the ten-year period. In comparison, those teachers in the bottom quarter of supportive schools have their learning plateau after three years within the profession. This provides evidence that when school culture and SLT are more supportive, the experience of working there will have a larger influence on the performance and success of the teacher. Research by Booth et al. (2021) supports this finding, with schools that had a positive school culture and focus on autonomy in choosing PD found to have higher levels of job satisfaction amongst their teachers.

Encouraging teachers to be researchers and sharers of knowledge reinforces the collaborative nature of the profession (Ovenden-Hope et al., 2018), with a teacher's desire to contribute to the school community and culture in positive and meaningful ways, worthy of capture (Howes & Goodman-Delahunty, 2015). Collaboration and a sense of

community encourages open communication and supportive attitudes (Hallinger, 2003; Ladd, 2011). For AHS teachers in New Zealand this communication and collaboration can be through the HATA but also through their school (Croom, 2003). Teachers with well-established networks can also sometimes struggle to know which colleagues to approach to learn from their expertise, which reinforces the impact that middle and senior leaders can have in helping teachers share their expertise (Allen & Sims, 2018). Middle and senior leaders in the school can also help provide additional responsibilities in order to provide teachers with a sense of progression in their career (Sims, 2020). Where providing opportunities for the professional growth, and therefore to the benefit of others is an attribute of servant leadership (Humphreys, 2005).

Workload is key; however, a lack of autonomy, scrutiny around their ability to teach and manage student behaviour, and the SLT are all contributing factors to the culture that is found amongst the teachers in an organisation. Reducing teacher workload unfortunately will not address the cultural issues that were found in the research by Perryman and Calvert (2019). Whipp and Salin (2018) echoed this, stating that for teachers to sustain fulfilment in their job, they need to work within a supportive culture. It is difficult to reduce workload, but school leaders and teachers need to work collaboratively to change the culture of long working hours within their school (Allen & Sims, 2018). To provide a supportive working culture for teachers, teachers need to feel respected and valued. Leaders and management can reinforce this by displaying trust in teachers through autonomy, but to increase teachers' trust in them, they must be open and transparent with communication and for any directive or task required, provide a meaningful rationale (Whipp & Salin, 2018). Building and maintaining positive working relationships will have a positive influence on the culture in the school, and teachers will be more comfortable approaching middle or senior leadership teams if they communicate effectively and feel their input is valued (Ansley et al., 2019). Research by Sims (2020) found a strong association between leadership and management with teacher job satisfaction, which directly impacts on that teacher's retention.

2.9 Summary

There is a supply shortage of secondary school teachers which is not a new issue, nor is it confined to New Zealand. Some subjects, such as AHS appear to have an even lower supply of qualified teachers coming into the profession. Most research conducted in this area looks to investigate and provide reasons as to why teachers are leaving the profession. From the literature, it is evident that demands of the job, including expectations and workload placed on the classroom teacher, have been increasing

which has contributed to the attrition issue. Looking at retention of teachers globally has been explored, however not to the same extent as teacher attrition. The literature also highlights the gap that there has been limited research into the role of an AHS teacher and factors and motivate and sustain them, therefore increasing the likelihood of retention. The role of an AHS teacher creates further demands, for example, management of resources, and it is through support mechanisms such as PD and mentoring that are crucial for the success of the teacher.

Through a positive lens, understanding the reasons and motivations for teachers who stay in the profession is beneficial, as it provides an understanding of their professional identity. Relationships with students, including seeing their success, plus a love of the content that they teach, are main factors for AHS teachers staying in the profession. The SLT has a significant influence on teachers' self-efficacy, school culture, and overall job satisfaction. It is those leaders that display the attributes of transformational leaders who seemingly have more of a positive influence on the retention of quality teachers.

Chapter 3
Methodology

3.1 Introduction

This chapter provides the rationale for the selection and use of an appreciative inquiry (AI) theoretical lens. Then follows a discussion of the mixed method approach adopted and the two-phase data collection. Phase One involved an online questionnaire, with the aim of reaching a wider range of respondents and finding generalisable trends within the data. Phase Two consisted of semi-structured interviews which generated deeper understanding of those teachers' narratives. Using an appreciative inquiry approach surfaced understanding of what is sustaining and keeping current Agricultural and Horticultural Science (AHS) teachers in the profession. There is the potential that the findings can be generalised and allow for a deeper understanding of what could be done to support the retention of both novice and experienced AHS teachers.

3.2 Research Question and Rationale

The research question that guided this study was, *'What factors motivate and sustain the professional work of Agricultural and Horticultural Science curriculum leaders in New Zealand secondary schools?'.* The sub questions that helped investigate the research question were:

- As an AHS teacher, what are aspects of the role that you enjoy and why?
- As an AHS teacher, what aspects of the role have you found challenging and why?
- As an AHS teacher, what things i.e. resources or support, could be of benefit to you, and others?
- What other roles outside of the teaching role are you involved in, and what deciding factor/s were there when considering the additional roles?

With very little research conducted in New Zealand, and the most recent being 'Soil is Not Dirt' (Cloughley, 2020), this research allowed a detailed and reflective look at what factors are most influential for the retention of AHS curriculum leaders in New Zealand. Research from overseas, predominantly from the United Kingdom, the United States of America, and Australia, has often focused on attrition (McKim et al., 2021; Murray et al., 2011) rather than retention. Therefore, this research aimed to improve educational practice and give an insight into the reasons or influences that encourage AHS

curriculum leaders to stay in the profession in New Zealand, despite the challenges that they may encounter. Understanding what sustains, motivates and keeps these teachers in their professional work will provide school leaders, boards of trustees (BOT) and the government with insight into what is required to retain these competent and experienced teachers in a nationally significant subject area.

Taking an interpretivism epistemological approach, this research will inquire and seek to understand what motivates and sustains AHS curriculum leaders. The AI methodology employed in this research is grounded in social-constructivist theory (Hosking & McNamee, 2007). Using a mixed-method approach to data collection, a deductive process will be employed for the quantitative data, and an inductive process for the qualitative. However, it will be through an interpretive lens that the data together will be examined (Mertler, 2017).

In qualitative research reflexivity is a way to ensure rigor (Guillemin & Gillam, 2004), and allows for more discovery orientated questions which can help refine questions for a more rigorous and reflexive inquiry (Agee, 2009). Reflexivity is important as it acknowledges the role that I hold in the research, including prior experiences, assumptions and the importance of stepping back and looking from the outside of the research process (Berger, 2015; Guillemin & Gillam, 2004). This ensures critical reflection of how the knowledge is constructed during the data collection and data interpretation (Guillemin & Gillam, 2004). A reflexive researcher will actively construct interpretations, whilst scrutinising how those interpretations came about (Hertz, 1996). Being reflexive improves the quality and validity of the research, as it requires acknowledgment of the limitations from the findings produced (Guillemin & Gillam, 2004).

3.3 Appreciative Inquiry Theoretical Lens

3.3.1 What is Appreciative Inquiry?

Cooperrider and Srivastva (1987) first described the principles on which AI is based. AI is grounded in social-constructivist theory where the focus is on the ontology of becoming, rather than being (Hosking & McNamee, 2007), and is compatible with pedagogical approaches that focus on inquiry (Osborne, n.d). AI places a strong emphasis on inclusiveness and collaboration (Flavell, 2021). To understand the philosophical underpinnings of AI, an explanation of the definition is provided by Cooperrider and Whitney (2005) is needed, with the word appreciate meaning “valuing; recognizing the best in people and in organizations” (p. 7), and inquiry “the act of discovery, exploration, examination, looking at, investigation, and study” (p. 7). The research perspective is

uniquely intended for discovering and understanding, which can be both pragmatic and visionary (Cooperrider & Srivastva, 1987). The basic assumption is that every human system will contain elements that make it successful and effective (Armstrong et al., 2020).

Appreciative inquiry is a strengths-based, collaborative approach to change. It is through understanding the positive core and culture of the organisation that it can be strengthened (Moore, 2019; Osborne, n.d). A frequently cited definition from Cooperrider (2003) is “Appreciative Inquiry is the cooperative, co-evolutionary search for the best in people, their organizations, and the world around them” (p. 3). With the inquiry focused on what is working (Moore, 2019), the transformational potential of AI lies in the growth and strength perspective highlighting the positive principle (Magzan et al., 2019). It is through positive imagery and learned helpfulness that AI can have a large influence on shaping the culture within the organisation, as positive imagery nudges people towards positive actions (Cooperrider, 2008). Through collectiveness, AI creates new possibilities (Marques et al., 2011). The link between the research question and using AI as the research approach is that this methodology considers what factors sustain AHS teachers within their role. This leads onto what can be done for positive improvement through acknowledging and understanding the challenges that are faced and how they are overcome.

3.3.2 How has Appreciative Inquiry been used?

The use of AI in educational research has grown over the last decade (Grieten et al., 2018), not only as an approach to research, but as a set of techniques within other methodological frameworks (Clouder & King, 2015). AI use in education can be applied to enhance both teaching and learning and has had a focus on intellectual and character development (Waters & White, 2015). Neumann (2009) wrote that most of the academic research on AI has been carried out in the United States of America and Canada, with very little from a New Zealand context. Despite this, AI offers a way to inspire an educational transformation which is of benefit to the various stakeholders (Buchanan, 2014).

AI emphasises positive idea generation, in which participants engage in conversations with the researcher, and share their narratives (Coghlan & Brydon-Miller, 2014). It can be used in everyday practices such as creating quality relationships, developing personal strengths, and contributing to the wellbeing of not only ourselves, but of others (Armstrong et al., 2020). In addition, the positive approach aims to identify and evaluate

good practice (Coghlan & Brydon-Miller, 2014; Shuayb et al., 2009), and focusses the research on what is working well through a coevolutionary search for the best in people, their organisation, and the world around them, to improve performance and conditions (Cooperrider & Whitney, 2005). Allowing for the narratives and interpretation of human experience, AI is a derivation of phenomenology and it is the understanding of how the knowledge is generated within an organisation that will determine its future (Neumann, 2009). AI offers an affirmative approach and is an alternative to the problem-solving approach of action research (Shuayb et al., 2009) for organisation inquiry through an appreciative, strengths-based lens (Stavros et al., 2015). From an organisational perspective, AI can be used to increase and strengthen collaboration (Armstrong et al., 2020).

The original AI 4-D model involves four stages: Discovery, Dream, Design, and Destiny (Cooperrider & Whitney, 2005). However, some inquiries have adopted the more recent five stage framework which includes definition, this contains the overall focus or guiding question of the inquiry (Stavros et al., 2015). Whilst the five principles underpin the philosophy of AI practice, it is the 4-D and 5-D cycles that offer an AI process model for approaching positive change at all levels within a system (Cooperrider, 2008; Osborne, n.d).

- Stage one is define, which is to clarify the focus.
- Stage two is discover, where identification of the best that has been and what is occurs.
- Stage three is dream, where a results orientated vision is created of possibilities.
- Stage four is design, where the direction is determined, and articulating a collective design magnifying the positive core.
- Stage five is destiny, where the future is created through building hope and sustaining momentum for the evolution of positive change and performance.
  (Armstrong et al., 2020; Cooperrider & Whitney, 2005; Flavell, 2021; Lane, 2018; Tschannen-Moran & Tschannen-Moran, 2011).

Through a collaborative effort and involvement of people in all stages, creation and implementation of change are based on both personal and collective strengths (Buchanan, 2014). A collective effort is essential but it is the influence of leadership that is crucial for any change implementation and must be present throughout the inquiry process (Buchanan, 2014).

3.3.3 Why Appreciative Inquiry for this Research?

This research examined factors and influences on AHS curriculum leaders who choose to stay in the profession, despite the challenges faced (Murray et al., 2011). It sought to identify experiences, strengths, and potential opportunities that motivate and sustain these leaders to continue leading curriculum learning. Using the 5D framework allows us to look into the future and identify what positive changes could evolve and be created to ensure sustainment of curriculum leaders.

The AI researcher is seen as a change agent, looking for things to be grateful for, seeking out what is possible, and placing value on things worthy of being valued (Stavros et al., 2015). There is the possibility to have a positive and transformational impact (Grieten et al., 2018) through reflection and create a positive future for AHS teachers in New Zealand. The strength of using AI is that it can provide a positive outlook on the topic of retention, which stakeholders can use to implement change (Shuayb et al., 2009). Through eliminating the negative, it forces the focus onto what really matters, with the future of teachers and outcomes for students at the core (Stavros et al., 2003).

For this research, Phase One data collection was through an online Likert scale questionnaire, which was worded positively what influences, motivates, and sustains the respondents was important. Phase Two data collection was through semi-structured interviews with participants where the interview focused on them revisiting their own experiences, reflections, and memories (Lauterbach, 2018). This appreciative interview encouraged an open and honest dialogue of their narrative, with all the interviewed participants' voices being heard (Flavell, 2021). This methodology reflected many of the principles of an appreciative inquiry where the researchers' lived experience of the participants' reality assists in asking reflective questions (Keenan, 2017).

3.4 Mixed Method Rationale

Mixed method research combines both quantitative and qualitative data collection in a single study to understand a research question (Mertler, 2017). By using a mixed method approach, the data gathered was rounded and reliable as data collection through different ways can supplement each other (Creswell & Plano Clark, 2007). Using a mixed-methods approach and triangulation together was of benefit to this research. This research consisted of two data collection phases. Phase One was a quantitative online questionnaire and was used to gain an overall insight (Cohen et al., 2011). Phase Two consisted of semi-structured interviews, allowing the research to delve deeper into

reasonings, influences and the AHS teachers' narratives (Cohen et al., 2011), allowing for a reflexive inquiry (Agee, 2009).

By using a mixed method approach, the data gathered was rounded and reliable as data collection through different ways can supplement each other (Creswell & Plano Clark, 2007). Mixed method allowed data triangulation, which allows greater confidence in the research findings as it allowed multiple sources of data to be analysed (Mertler, 2017), which increased the validity of the findings and allowed multiple chances for unforeseen outcomes or viewpoints to appear (Chiong et al., 2017). Through triangulation of the mixed method approach, it led to a greater credibility in the overall findings (Shenton, 2004) with both quantitative and qualitative methods addressing internal and external validity (Cohen et al., 2017). It was essential to involve different samples of data to be collected via different methods on the same topic to capture different dimensions of the same phenomenon. Using triangulation to address the research question aimed to ensure that the research was valid and credible, as with qualitative research the researcher is often close to the data, and therefore subjectivity can be high (Mackey & Gass, 2005).

By using the participant selection variant of explanatory mixed-methods design, the quantitative data is important as it allowed the findings from Phase One to guide the semi-structured questions for the interview (Creswell & Plano Clark, 2007). The quantitative data and analysis were conducted first, with the qualitative being used to elaborate on, refine, or further explain the findings from the quantitative data (Mertler, 2017).

3.5 Participants

The participants for this study were AHS teachers who were currently teaching in New Zealand. In Phase One, the online questionnaire link was sent out via the HATA email database to 353 people (see Appendix A), and via social media (the HATA Facebook page). From this potential participant pool, 31 teachers from a range of demographics, including age, ethnic groups, experience teaching, and the decile of the school/s worked in, agreed to participate. This represents a response rate of 9%. Two reminders about the questionnaire were given via email and through social media, 1 week and then 1 day before closing to help secure a higher response rate. Research by Holtom et al. (2022) showed that there had been an increase in the overall average completion rates for online questionnaires, and in 2020 the average completion rate was 68%. A higher

completion rate would mean that the data would be more representative of the population of interest.

The eligibility requirements for Phase Two participants were that they had been teaching and a leading learning in the subject of AHS in New Zealand for more than five years, with the selection of participants occurring via randomised selection (see Appendix B). There were five participants in Phase Two.

3.6 Data Collection Methods

The nature of this research was best suited to a mixed-method approach. This provided an insight into the factors that motivate and sustain the professional work of AHS curriculum leaders, and therefore the likelihood of them choosing to stay in the profession in New Zealand. There were a number of methods available for data collection such as surveys, interviews, and focus groups (Mertler, 2017). An online questionnaire, which is a type of survey, was used for the quantitative data collected in Phase One, and individual semi-structured interviews for the qualitative data collected in Phase Two.

Due to AHS teachers being located throughout New Zealand, having an online questionnaire was the easiest and most efficient way to reach those teachers. The individual semi-structured interviews were held online at a mutually convenient time. As such, location was not a limitation to their participation, and COVID-19 protocols were adhered to.

3.6.1 Phase One – Online Questionnaire

Through the use of a questionnaire, the purpose was to collect data from a sample of the population in a way that the knowledge gained was best representative of the total population (Cohen et al., 2011). For this study, the method of survey via online questionnaires was an appropriate method for the data collection of Phase One. Furthermore, Likert rating scales were used allowing data to be analysed statistically used. This allowed for the collection of data from a wider range of respondents, with the aim of finding generalisable trends within the data. As email addresses were not collected from the questionnaire, it allowed respondents to remain anonymous about their perspectives, which likely increased honest responses to items and data credibility.

The critical factor with any data collected, is whether it is appropriate and accurate for the purposes of the research (Mertler, 2017). It is possible that completion of the Phase

One online questionnaire for the collection of quantitative data for Phase One, the data collected might not have been representative of the population if those who were less engaged chose not to complete it, with a biases occurring through self-selection into the sample (Andrade, 2020). Validity of questionnaires came from whether respondents did so honestly, and whether those who did not complete the questionnaire would have given the same distribution as those respondents who did (Cohen et al., 2017).

3.6.1.1 Likert Rating Scales

Rating scales, for example Likert scales, are a popular version of closed-response questions, and are effective in measuring attitudes, perceptions, or behaviours (Mertler, 2017). A Likert scale ranges from strongly disagree to strongly agree. These discrete rating scales allow questions to be answered easily, and have a higher completion rate than continuous rating scales (Chyung, Swanson, et al., 2018; Cohen et al., 2007), which "provides high reliability" (Mahat & Imms, 2020, p. 153). This is beneficial as the cohort of AHS teachers in New Zealand is small in comparison to other curriculum areas. The use of Likert scales allowed for the respondents to communicate both the direction, and strength of their view in relation to the item being asked (Mertler, 2017).

The validity and reliability of the questionnaire could be influenced by positively and negatively worded items. Chyung, Barkin, et al. (2018) suggest that a researcher should not mix positively and negatively worded items. Research further suggests that some respondents might not read negatively worded items as carefully as positively worded items, leading to a tendency to disagree with a negatively worded item, thus reducing reliability (Cohen et al., 2007). By having either all positively worded or negatively worded items it "will result in the most valid responses" (Chyung, Barkin, et al., 2018, p. 24). A five-point taking scale was chosen for this study as Chyung et al. (2017) states that "a midpoint can also improve psychometric properties such as instrument reliability" (p. 18). However, there was a concern that participants might use the midpoint as a response when they were unfamiliar with the item, which is different to someone who is giving a neutral opinion (Mertler, 2017).

3.6.1.2 Questionnaire Design

The use of questionnaire surveys as a method of data collection has many advantages, including gathering large amounts of anonymous data. Individuals who are interested in the research topic are more likely to take part in a questionnaire (Newby, 2014). With questionnaire design, the purpose is to make the process for the respondent as easy

and engaging as possible. It is important to think about how the respondent is likely to experience the questions, and what might be required to answer accurately (Wolf, 2016). Questions were constructed from the pilot group to ensure that they were inclusive and relevant to al AHS teachers. This pilot was an unstructured focus group discussion which allowed three AHS teachers who volunteered their time to informally chat and discussion their thoughts on teaching AHS in New Zealand. The transcript that is obtained from the pilot group showed common ideas worth exploring that will help to answer the research question. It is crucial for a questionnaire's success that they are not too long, that the vocabulary is simple, and sentences are concise to allow for easy accessibility (Mertler, 2017). This questionnaire had five sections for respondents to complete (see Appendix C). The decision to use the five-point Likert scale ensured that there were enough scale points for respondents to place themselves, which helped with reporting (Wolf, 2016).

Creating the right mindset amongst respondents by reinforcing to them that they are the experts helped achieve higher completion rates (Newby, 2014), as well as accepting partial completion of questionnaires submitted by respondents. Partial completion did not compromise the integrity of this study, therefore when designing the questionnaire there was no requirement for each question to be answered before moving on to the next (University of St Andrews, n.d).

Google Forms was selected as the medium to distribute the questionnaire, as it was familiar to the researcher, but could also be easily distributed and analysed (Quan-Haase & Sloan, 2016). Agricultural and Horticultural Science teachers are familiar with working online particularly due to the 2020 Covid-19 lockdown when all teaching and learning shifted to this medium, with many using Google classroom within their teaching role. The questionnaire was distributed via the HATA email database by the secretary of the HATA, and via social media (the HATA Facebook page), and was open for two weeks (see Appendix D).

It is important to acknowledge the limitations of online questionnaires in that they are only completed by people who are literate, who have access to the internet and emails, and by those who are interested enough in the subject to take the time to respond (Andrade, 2020). Since the COVID-19 pandemic, older age group teachers have become more familiar and experienced with the technological demands of the profession, are more likely to participate in an online questionnaire if it is sent via email (Mahmutovic, 2021). The close-ended anonymous online questionnaire alone does not offer the opportunity to follow up ideas or expand on responses given, one of the main strengths of semi-structured interviews (Mertler, 2017).

3.6.2 Phase Two – Semi-Structured Interviews

As AI is a social construction of the participants involved, qualitative data was needed to elaborate on the results from Phase One of the study (Thibodeau, 2011). Using appreciative inquiry allowed me to bring together the insights and perceptions heard within participants' narratives, which included personal, professional, and political influences. The qualitative data provided opportunities for consenting individuals to express their own opinions and perspectives (Agee, 2009). By using a phenomenological approach to the semi-structured interviews with participants, the focus was on them revisiting their own experiences, reflections, and memories (Lauterbach, 2018), thus delving deeper into the research questions (Ahlin, 2019; Mertler, 2017). This type of data is powerful as it captures participant insights (Eisenhart, 2006). It was necessary that the accounts from the participants' interview were accurate through interpretation of the results from the qualitative data collection (Cohen et al., 2017), so that coding could occur, with themes emerging from the data. As interview data is always subjective, participant checking of the transcripts is necessary to ensure that the participants opinions and thoughts are captured and are an accurate representation of what they wished to communicate.

With any type of data collection, there will be both benefits and limitations. Semi-structured interviews have the advantage that they can generate a large data set and allow for further exploration of findings that were discovered in the prior close-ended questionnaire (Adams, 2015). Limitations of semi-structured interviews can be that they are time-consuming and labour intensive, from preparing for and setting up the interview, to conducting and analysing the interview. Being open ended-questions, they can be difficult to analyse, and difficult to compare answers (Adams, 2015). However, it is through gaining a deeper understanding of the participants responses that adds rich data to a mixed-method approach (Ahlin, 2019).

Responding to open-ended question requires a different skill set than closed-ended questions but, for both, Wolf (2016) states "ask only one question at a time, use simple and familiar words" (p. 222). For open-ended questions, the respondent may require motivation to provide quality responses with sufficient detail for analysis (Wolf, 2016). Open-ended items allow the participant to provide a response to how they have interpreted the item, with the researcher then required to group similar responses together to provide data for further analysis (Mertler, 2017). Interview participants were emailed the semi-structured question schedule 72-hours prior to their interview (see Appendix E and Appendix F). This allowed them to view questions and answer them to

the best of their ability. Being transparent through communication of the questions prior could reduce potential stress for the participants. Although this could have led to scripted answers, it allowed the participant to be prepared, and to withdraw from the interview prior to the interview taking place based on the questions. Throughout the interview, I was mindful to give the participant enough time to respond to the questions being asked.

Prior to the interview commencing, participants provided voluntary informed consent and had the right to withdraw from the research during this phase (see Appendix G). Using a semi-structured interview ensured that standardised data was able to be collected, but with flexibility to be adaptive for the participants' narratives to emerge. To protect the participant privacy, non-identifiers were used in the transcript approval, and unisex pseudonyms used in the analysis and reporting (Chiong et al., 2017). The interview transcripts were emailed to the participants who had the right to amend and approve the use of the transcript (see Appendix H). The transcripts were coded based on relevance to the research question and a framework based on questionnaire findings subsequently refined to include patterns that emerged through the narratives.

3.7 Analysis

3.7.1 Phase One - Quantitative

The advantage of online questionnaires for analysis purposes is that it reduces the time spent on data input and collation (Mertler, 2017). Google Forms allowed for the data to be downloaded into a .csv document for easy uploading into the analysis software being used for this study, SPSS. Google Forms also allowed for data to be sorted and analysed by individual response if desired.

Validity evidence is important when results are to be generalised (Mertler, 2017). An issue for the reliability and validity of the questionnaires was sample size. An unrepresentative sample can distort data and prevent statistical analysis (Cohen et al., 2017). Second to validity, reliability is an essential characteristic of quantitative data, which is often established using a statistical analysis to see the correlation of results. Both validity and reliability are not distinct concepts, but share a valuable relationship, as it is possible that scores obtained can be reliable but not valid. However, scores cannot be both valid and unreliable (Mertler, 2017).

Through a deductive process (Mertler, 2017) the responses to the Likert-scale questions found in Phase One were treated as categorical variables for statistical analysis in SPSS

to determine the mean and confidence interval for the frequency of responses. To ensure reliability and validity of the method, Cronbach's alpha and factor analysis was calculated (Van der Vyver et al., 2020). The closer the score to 1, the greater the reliability of the items in the scale (Gliem & Gliem, 2003). Cronbach's alpha assessed the reliability of the test items. This is not a statistical test, but a coefficient of reliability (UCLA, n.d), and is a way of measuring the strength of that reliability (Taber, 2018). The analysis of the data used the subscales, not individual items, as "Cronbach's alpha does not provide reliability estimates for single items" (Gliem & Gliem, 2003, p. 88). The graphs and tables generated and used within this study were statistically relevant for the purpose of this analysis (Quan-Haase & Sloan, 2016).

3.7.2 Phase Two – Qualitative

For the semi-structured interviews conducted during Phase Two, the representations of participants needed to be trustworthy (Eisenhart, 2006; Lincoln & Guba, 1985). Study bias needed to be acknowledged with the semi-structured interviews. Reflexivity is crucial as I had my own opinions about the questions, and was also known to the colleagues I was interviewing. To minimise bias, preparation prior to the interview through to the analysis was required (Cohen et al., 2017). Following best practice for qualitative data is to plan anonymisation (Grinyer, 2009),), I used non-identifiers such as 'Participant A' for transcript approval, and unisex pseudonyms such as 'Taylor' at the time of the analysis and reporting, thereby protecting the privacy of participants in Phase Two.

To begin the thematic analysis of that data, the five transcripts were analysed using an inductive coding and categorising approach, with emerging patterns and themes being noted (Mertler, 2017; Traini et al., 2021). Keeping the research question in mind when analysing data helped establish connections between themes and link these to the research question. This allowed a holistic understanding of the emerging patterns and themes coming through the interviews. Going through written transcripts from videos was time-consuming, but ultimately allowed for rich data to be provided, and was therefore a worthwhile use of time. This led to concept mapping, with a central theme emerging with linking concepts. Finally, peer debriefing - with a colleague who was also on their educational leadership journey - via the Google Meet platform "provided the opportunity for a fresh perspective and increased the overall credibility of the research" (Mertler, 2017, p. 143).

3.8 Ethical Considerations

Ethical considerations guide research design and procedures (Blanche et al., 2006), with the aim of increasing validity, maintaining integrity, and protecting the rights of the research participants. Therefore, ethical considerations were a constant companion on the research journey. The Waikato University Code of Ethical Conduct in Human Research and Related Activities Regulations (2008) was used to ensure that this research met the requirements for Human Ethics, and in the early stages of the research the approval from Te Wānanga Toi Tangata Division of Education Research Ethics Committee at the University of Waikato was obtained (see Appendix I).

With the study, it was important that the research was collected and reported on ethically. All respondents needed to understand the purpose and processes of the research, and provide informed, uncoerced consent to the questionnaire, and if they chose to, the interview (Cohen et al., 2011; Mockler, 2014). Abed (2015) stated “informed consent is the process whereby the result is an informed option concerning the voluntary contribution in a research” (p. 1), and participants should fully understand the purpose and processes of the research. The research conducted through the study was under the principle of beneficence; it acted in ways that endeavoured to benefit and not cause harm to the participants (Guillemin & Gillam, 2004).

Phase One data collection was an anonymous online questionnaire using Google Forms where I was able to collect anonymised aggregated and decontextualised data. With the questionnaire, no emails were recorded (settings had been changed on the Google Form) so anonymity could be assured. If a participant wished to take part in Phase Two, they needed to email their interest to an email address specific for this project which I had sole access to. This was prompted at the end of the questionnaire and deliberately prevented the identification possible when sorting Google Form data by response. This meant that questionnaire respondents remained anonymous.

Undertaking of Phase Two, the semi-structured individual interviews, took place via a video call using either the Microsoft Teams or Google Meet platform. Participants could join with no camera if they chose too. This minimised personal contact considering the COVID-19 Education Research Ethics published in 2020, but also meant that location was not a barrier for participation. As the Phase Two qualitative data explored the views and perceptions of five Agricultural and Horticultural Science teachers in New Zealand, unisex pseudonyms were used to protect participant confidentiality. Anonymity could not be guaranteed, however, as the sample size for Phase Two was small, and the potential

existed for participants to be identified from the context. As such, permission was also sought from the participants' principals, as the participants were representing their schools, and there was the potential for disclosing sensitive information (see Appendix J).

3.9 Summary

The use of AI for this study was important as it provided a positive outlook on the topic of retention of AHS teachers in New Zealand, (Shuayb et al., 2009). Through eliminating the negative, it forced the focus onto positive aspects of curriculum leadership: the reasons and influences that sustain these curriculum leaders in their professional work, the future sustainability of these curriculum leaders and therefore, the outcome for the students at the core (Stavros et al., 2003).

A mixed-method approach in the study allowed for an understanding of a wide range of respondents through the data collected via questionnaire, with further elaboration from those who consented to participate in the second phase interview. Utilising a combination of both types of data provided a better understanding of the research question than either type of data would alone (Mertler, 2017). As the findings had the potential to impact the profession and the students, it was important that the research was rigorously completed in an ethical manner. I acknowledged that there would be ambiguous moments; I needed to reflect on decisions, and ensure an ethical study was conducted, putting aside my own bias as a current AHS teacher in New Zealand.

While any data collected has limitations, the critical factor is whether it is appropriate and accurate for the purposes of the research (Mertler, 2017). Ensuring the quality of the educational research being undertaken is upheld is important for the validity and credibility of the findings (Mertler, 2017). It is through a mixed-methods approach that triangulation will lead to a greater credibility in the overall findings (Shenton, 2004) with both quantitative and qualitative methods addressing internal and external validity (Cohen et al., 2017).

Chapter 4
Findings

4.1 Introduction

This chapter is organised in two sections to allow the findings from both Phase One and Two data collection to be highlighted. Both phases provided important insights into what sustains Agricultural and Horticultural Science (AHS) teachers, and also highlighted challenges and constraints that impact the likelihood of teachers and curriculum leaders remaining within the profession. Phase One allowed a broad overview of perspectives from AHS teachers across New Zealand to be seen through an online questionnaire containing Likert scale items. Phase Two, which consisted of semi-structured interviews with five participants who had all been teaching for more than five years, elicited from personal narratives a more in-depth and insightful perspective on what this means for leaders.

4.2 Phase One Findings

4.2.1 Response Rate

The questionnaire was sent out via the Horticulture and Agriculture Teachers' Association of New Zealand (HATA) email database which consists of approximately 353 people. The questionnaire link was also posted to the HATA Facebook page. The email was sent, and Facebook post uploaded on the 14th of June 2022 and was open for two weeks. 31 teachers completed this online questionnaire, giving a 9% response rate. The questionnaire was released towards the end of term 2, and there was the potential that teachers were not able to find the time to complete amongst their teaching demands. Key findings from Phase One relate to respondent demographics, and what, as an AHS teacher, respondents enjoyed, found challenging, saw as being of benefit in improving working conditions and job satisfaction, and aspired to be in 5-10 years' time.

4.2.2 Demographics of Respondents

Of the responses, 67.7% were female compared to 32.3% male. The mean age of respondents was 46.76 years (median 45.5, 41-50 age bracket), with 87.2% being at a decile five or higher school. This is not unusual as females, and those who are younger, are more likely to respond to questionnaires (Smith, 2008). The average age of AHS

teachers in New Zealand is 55 years old (Allen, 2022b), and the gender split is 53% female and 47% male (K. Allen, personal communication, September 16th 2022).

Figure 4.1 Graph showing age distribution of respondents for Phase One

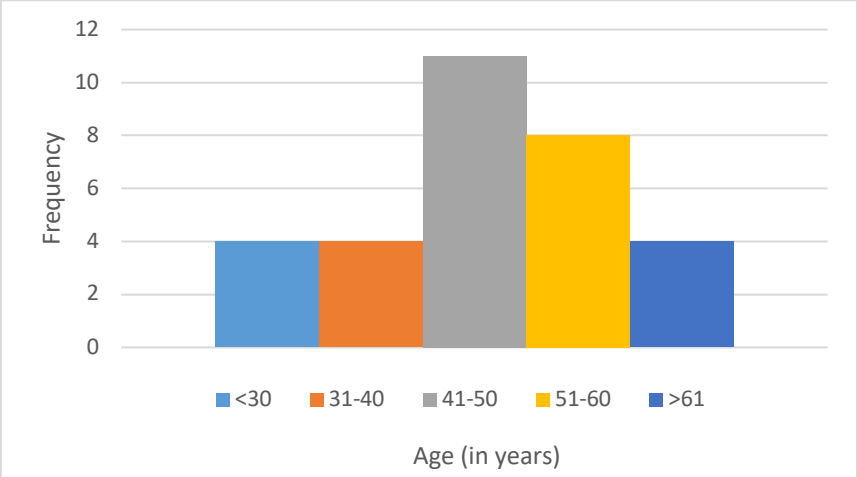
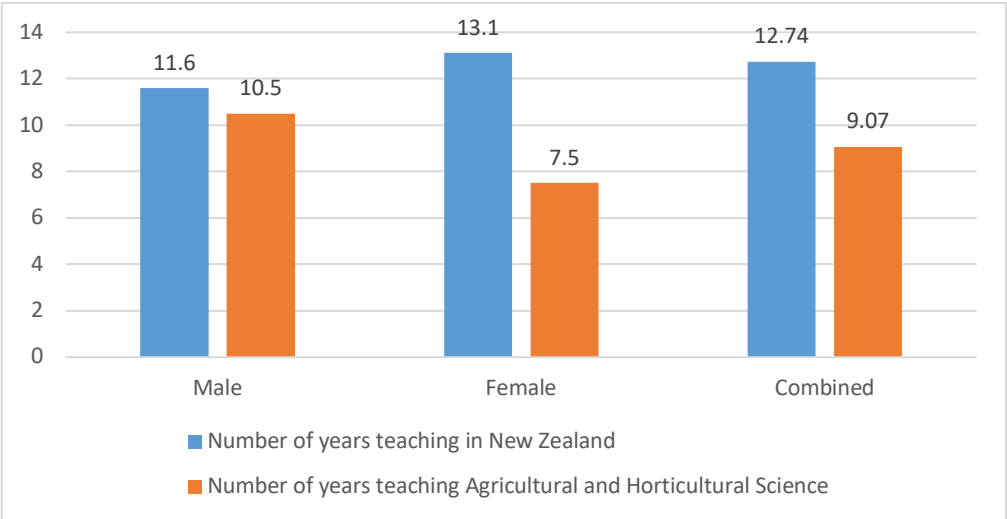


Figure 4.1 shows the age distribution of respondents, and highlights that those <40 years old made up 25.8% of the respondents, therefore, three quarters of the respondents were over the age of 40. The age bracket of 41-50 years old had the largest percentage of respondents at 35.5%, with 38.7% of respondents having indicated that they were over the age of 51. This suggests that within the next 15 years these respondents would most likely be looking at retiring from the profession. The lower proportion of younger AHS teachers and an ageing teaching population highlights a future supply issue in the next decade or two.

Figure 4.2 Graph showing number of years teaching in New Zealand and the number of years teaching Agricultural and Horticultural Science

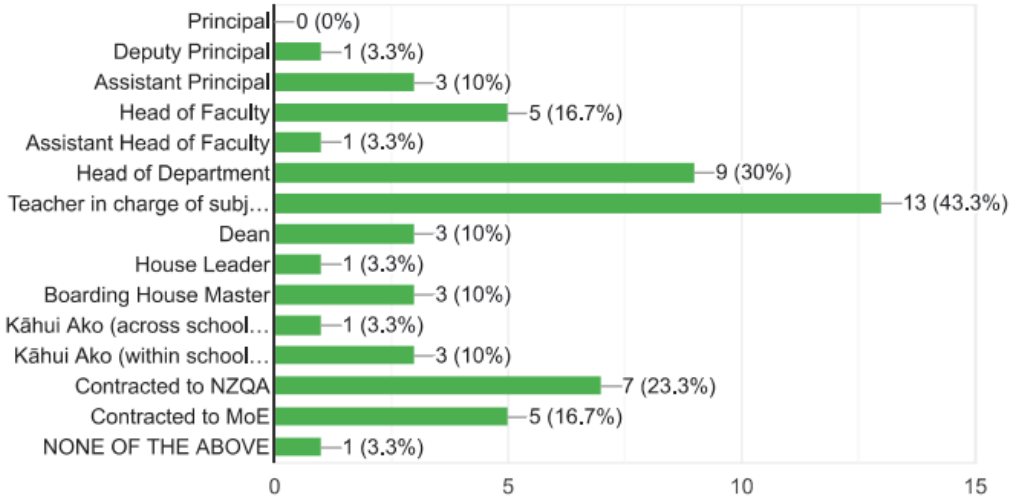


When reviewing the difference between the number of years teaching in New Zealand compared to the number of years teaching AHS, 12.74 years compared to 9.07 years, it

is not until the respondents are analysed by gender that a difference can be seen. In figure 4.2, there is a clear difference between the male and female respondents, number of years teaching in New Zealand, compared to that of the number of years teaching AHS, with the female respondents' number of years in teaching being almost double that of the years that they have been teaching AHS. Responding to the question *How did you get into Agricultural and Horticultural Science teaching?* some male respondents stated, *"did an Agricultural Science degree", "moved from industry into teaching as a mature student"*, and *"to share passion for the industry".* Even though there were some female respondents who entered AHS teaching by a similar pathway, several stated: *"request from Principal and BoT", "I am HoF and previous agriculture teacher moved to new school, despite advertising could not find replacement"*, *"I wanted to do it because the students from my school were from farms"*, and *"was asked to fill in a gap".* These responses highlight the potential reason for the significant difference in gender. In general, the male AHS teachers have typically had a direct path into teaching the subject, whereas their female counterparts have taught other specialist subjects, and have either been shoulder-tapped, or seen the student need for the subject at their school, and taken on the subject.

Alongside their teaching positions, all but one respondent held other roles either within their school, New Zealand Qualifications Authority (NZQA), or the Ministry of Education (MOE). Figure 4.3 below shows that the majority (93.3%) of these roles were internal to the school and focused on subject and department /faculty leadership

Figure 4.3 Graph showing other roles held by respondents in addition to being a classroom teacher of Agricultural and Horticultural Science. Note that some respondents hold multiple roles so total percentage does not equal 100.



A few of the reasons cited for holding additional roles were: *"help guide the direction of the subject"*, *"career progression"*, *"to challenge myself"*, and *"to continue to learn and upskill"*. This not only indicates a high level of self-efficacy and agency amongst these respondents, but also suggests a relational leadership style. Thus, they are in these positions to serve others, by focusing on others' growth before theirs, and the well-being and engagement of their students.

4.2.3 As an Agricultural and Horticultural Science teacher, I enjoy…

The Likert scale statements in this section of the online questionnaire allowed respondents to identify what it is about teaching the subject of AHS that they most enjoy, which was the relationships formed with students. This data also highlights the area that brings the least enjoyment for the respondents, which that there are no specific textbooks.

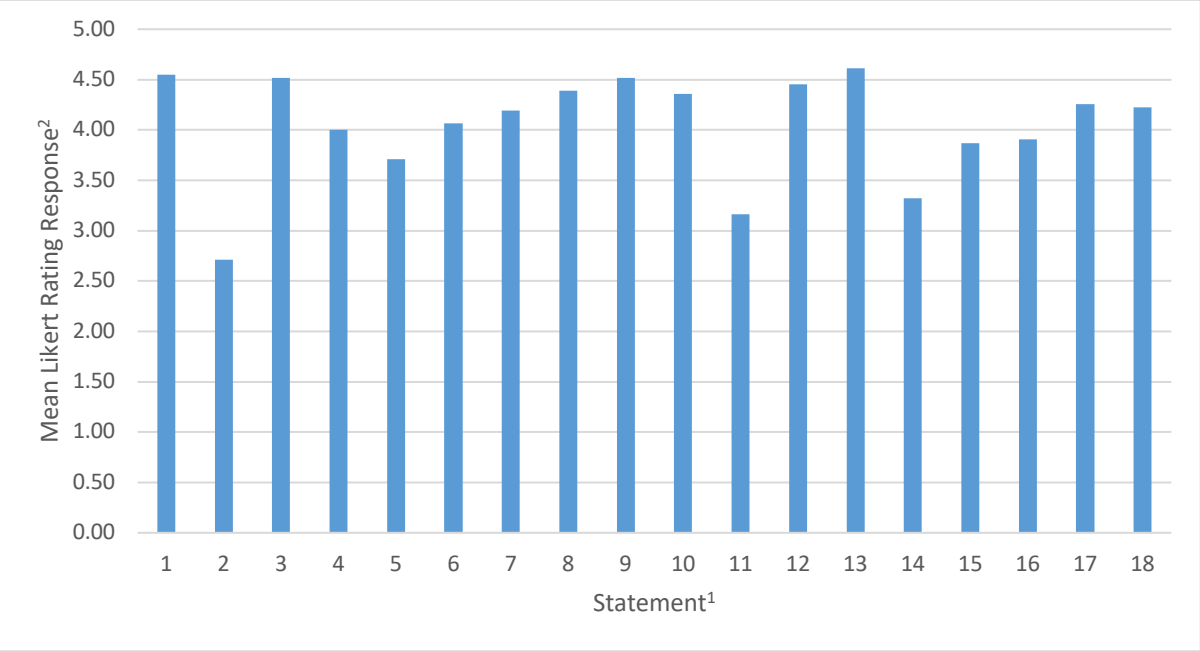
Table 4.1 Percentage of Likert ratings given, mean and median ratings, standard deviation (SD), and 95% Confidence Interval (CI) for the subgroup of statements under As an Agricultural and Horticultural Science teacher, I enjoy...

Statement	Likert Rating Response (%)[1]					Mean	Median	SD	95% CI	
	(1)	(2)	(3)	(4)	(5)				Lower	Upper
1 …the ever-changing contexts of what I teach.	0.0	0.0	12.9	19.4	67.7	4.55	5.00	0.723	4.28	4.81
2 …that there are no specific textbooks.	29.0	9.7	35.5	12.9	12.9	2.71	3.00	1.371	2.21	3.21
3 …that I can create my own program.	0	3.2	6.5	25.8	64.5	4.52	5.00	0.769	4.23	4.80
4 …the holidays.	3.2	6.7	26.7	13.3	50.0	4.00	4.50	1.174	3.56	4.44
5 …the extra-curricular aspects - e.g., YF competitions, practical courses.	3.2	9.7	35.5	16.1	35.5	3.71	4.00	1.160	3.28	4.14
6 …the support of the industry.	3.2	6.5	16.1	29.0	45.2	4.06	4.00	1.093	3.66	4.47
7 …the contacts that are made through networking opportunities.	3.2	9.7	3.2	32.3	51.6	4.19	5.00	1.108	3.79	4.60
8 …the students that I teach.	0	3.2	9.7	32.3	54.8	4.39	5.00	0.803	4.09	4.68
9 …that the subject has career pathways attached to it.	0	0.0	12.9	22.6	64.5	4.52	5.00	0.724	4.25	4.78

10 ...that it is an option subject, so students elect to take it.	0	3.2	9.7	35.5	51.6	4.35	5.00	0.798	4.06	4.65
11 …the salary that I receive.	9.7	12.9	41.9	22.6	12.9	3.16	3.00	1.128	2.75	3.58
12 …the diversity of teaching contexts i.e., every day is different.	0	0.0	12.9	29.0	58.1	4.45	5.00	0.723	4.19	4.72
13 …the relationships formed with students.	0	0.0	6.5	25.8	67.7	4.61	5.00	0.615	4.39	4.84
14 …the professional development available.	3.2	22.6	32.2	22.6	19.4	3.32	3.00	1.137	2.91	3.74
15 …the diversity of the students that I teach.	3.2	16.1	16.1	19.4	45.2	3.87	4.00	1.258	3.41	4.33
16 …the financial security of the job.	3.2	3.2	29.0	29.0	35.5	3.90	4.00	1.044	3.52	4.29
17 …the practical components.	3.2	0.0	19.4	22.0	54.8	4.26	5.00	0.999	3.89	4.62
18 …that it is discussion-based teaching.	0	0.0	25.8	25.8	48.4	4.23	4.00	0.845	3.92	4.54

[1] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).
[2] Two-Sided p <0.001

Figure 4.4 Graph showing Mean Likert Rating Response for the subgroup of statements under As an Agricultural and Horticultural Science teacher, I enjoy...



[1] Statements were: 1 …the ever-changing contexts of what I teach. 2 …that there are no specific textbooks. 3 …that I can create my own program. 4 …the holidays. 5 …the extra-curricular aspects - e.g., YF competitions, practical courses. 6 …the support of the industry. 7 …the contacts that are made through networking opportunities. 8. …the students that I teach. 9 …that the subject has career pathways attached to it. 10 …that it is an option subject, so students elect to take it. 11 …the salary that I receive. 12 …the diversity of teaching contexts i.e., every day is different. 13 …the relationships formed with students. 14 …the professional development available. 15 …the diversity of the students that I teach. 16 …the financial security of the job. 17 …the practical components. 18 …that it is discussion-based teaching.
[2] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).

The relationships formed with students (statement 13) is the aspect that was most enjoyed by AHS teachers, with a mean of 4.61 on the Likert rating, and 67.7% of respondents strongly agreeing with this statement. Agricultural and Horticultural Science teachers also enjoyed the ever-changing contexts of what they teach (statement 1), with a mean of 4.55 and 67.7% of respondents strongly agreeing with this statement. Closely followed, with means of both 4.52 and 64.5% strongly agreeing, were the ability to create their own program (statement 3) and the career pathways attached to the subject (statement 11).

No specific textbooks (statement 2) had a mean Likert rating of 2.71, indicating that this aspect of AHS teaching in New Zealand is the least enjoyed by respondents, followed by the salary received (statement 11) with a mean of 3.16. However, 41.9% of respondents to this statement rated it a three on the Likert scale, indicating that they neither agree nor disagree. The PD available (statement 14) had the third lowest mean rating of 3.32.

4.2.4 As an Agricultural and Horticultural Science teacher, I have found the following challenges…

This subheading from the Likert scale allowed a series of statements to understand what challenges the respondents have encountered regarding teaching AHS. Consequently, it also brings to light the areas that have been of least challenge to them. The challenges identified provide leaders with a starting point to address retention, content matter, and teacher shortages in this subject.

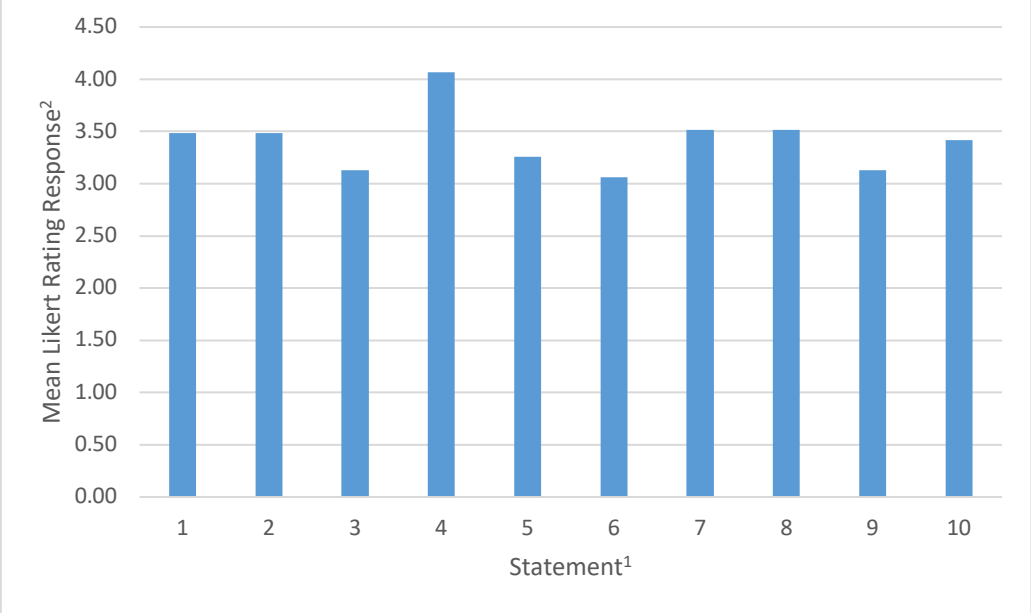
Table 4.2 Percentage of Likert ratings given, mean and median ratings, standard deviation (SD), and 95% Confidence Interval (CI) for the subgroup of statements under As an Agricultural and Horticultural Science teacher, I have found the following challenges…

Statement	Likert Rating Response (%)[1]					Mean	Median	SD	95% CI	
	(1)	(2)	(3)	(4)	(5)				Lower	Upper
1 …that the subject can be a "dumping" ground for students.	19.4	9.7	6.5	32.3	32.3	3.48	4.00	1.525	2.92	4.04
2 …that there are no specific textbooks.	9.7	12.9	25.8	22.6	29.0	3.48	4.00	1.313	3.00	3.97
3 …that the senior leadership team does not understand the need for trips and/or time out of school.	16.1	16.1	25.8	22.6	19.4	3.13	3.00	1.360	2.63	3.63

4 …the workload.	3.2	6.5	16.1	29.0	45.2	4.06	4.00	1.093	3.66	4.47
5 …being a stand-alone subject.	12.9	16.1	25.8	22.6	22.6	3.26	3.00	1.341	2.77	3.75
6 …being placed within the Science Faculty.	16.1	16.1	32.3	16.1	19.4	3.06	3.00	1.340	2.57	3.56
7 …being overlooked as a subject.	16.1	9.7	12.9	29.0	32.3	3.52	4.00	1.458	2.98	4.05
8 …the negative comments and opinions from others about the subject.	16.1	3.2	19.4	35.5	25.8	3.52	4.00	1.363	3.02	4.02
9 …being the only teacher of the subject within the school.	22.6	16.1	19.4	9.7	32.3	3.13	3.00	1.586	2.55	3.71
10 …that it is not seen as an academic subject.	12.9	12.9	16.1	35.5	22.6	3.42	4.00	1.336	2.93	3.91

[1] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).
[2] Two-Sided p <0.001

Figure 4.5 Graph showing Mean Likert Rating Response for the subgroup of statements under As an Agricultural and Horticultural Science teacher, I have found the following challenges…



[1] Statements were: 1 …that the subject can be a "dumping" ground for students. 2 …that there are no specific textbooks. 3 …that the senior leadership team does not understand the need for trips and/or time out of school. 4 …the workload. 5 …being a stand-alone subject. 6 …being placed within the Science Faculty. 7 …being overlooked as a subject. 8 …the negative comments and opinions from others about the subject. 9 …being the only teacher of the subject within the school. 10 …that it is not seen as an academic subject.
[2] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).

The strongest agreement by respondents in the Likert ratings for challenges as an AHS teacher with a mean of 4.06, is the workload (statement 4). Being overlooked as a subject (statement 7) and the negative comments and opinions from others about the subject (statement 8), were both identified as challenges with means of 3.52, and 61.3% of respondents either agreeing or strongly agreeing with those statements.

Other challenges faced by AHS teachers were that the subject can be a "dumping" ground for students (statement 1), and not seen as an academic subject (statement 10), with means of 3.48 and 3.42 respectively. Linking from statement 2 in Table 4.2, that there are no specific textbooks, which was the statement of least agreement under the subgroup of statements related to *As an Agricultural and Horticultural Science teacher, I enjoy...,* it was also identified with a mean of 3.48 as a challenge (statement 2), with 51.6% of respondents either agreeing or strongly agreeing with the statement.

4.2.5 As an Agricultural and Horticultural Science teacher, I believe that the following would benefit me as a teacher…

This subheading from the Likert scale allowed a series of statements to understand what the respondents thought would be of most benefit to them. Furthermore, it indicated factors that negatively impact them in their role. This new understanding creates a platform for leaders to address wide-spread issues within the profession, in the process increasing job satisfaction, improving the retention of passionate teachers, and enhancing learner outcomes.

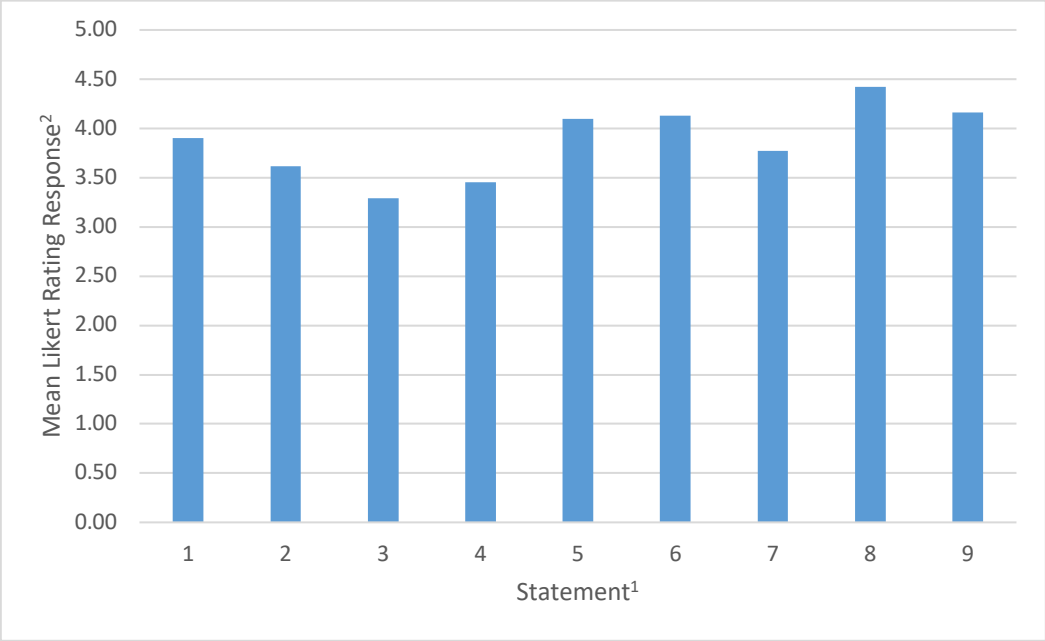
Table 4.3 Percentage of Likert ratings given, mean and median ratings, standard deviation (SD), and 95% Confidence Interval (CI) for the subgroup of statements under As an Agricultural and Horticultural Science teacher, I believe that the following would benefit me as a teacher…

Statement	Likert Rating Response (%)[1]					Mean	Median	SD	95% CI	
	(1)	(2)	(3)	(4)	(5)				Lower	Upper
1 …an increase in pay.	6.5	6.5	22.6	19.4	45.2	3.90	4.00	1.248	3.45	4.36
2 …more support from the Senior Leadership Team.	3.2	12.9	29.0	29.0	25.8	3.61	4.00	1.116	3.20	4.02
3 …more support from the community.	6.5	12.9	38.7	29.0	12.9	3.29	3.00	1.071	2.90	3.68
4 …more support from colleagues.	0.0	16.1	32.3	41.9	9.7	3.45	4.00	0.888	3.13	3.78
5 …a reduced workload.	0.0	0.0	29.0	32.3	38.7	4.10	4.00	0.831	3.79	4.40
6 …more resources provided, e.g., a textbook or workbook.	6.5	3.2	19.4	12.9	58.1	4.13	5.00	1.231	3.68	4.58
7 …having a mentor Agricultural and Horticultural Science teacher.	6.5	3.2	29.0	29.0	32.3	3.77	4.00	1.146	3.35	4.19

8 …being partnered up with a mentor within the subject when I was beginning my teaching career as an Agricultural and Horticultural Science teacher.	0.0	3.2	12.9	22.6	61.3	4.42	5.00	0.848	4.11	4.73
9 …more professional development opportunities, e.g., able to attend field days, B+L days.	3.2	0.0	22.6	25.8	48.4	4.16	4.00	1.003	3.79	4.53

[1] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).
[2] Two-Sided p <0.001

Figure 4.6 Graph showing Mean Likert Rating Response for the subgroup of statements under As an Agricultural and Horticultural Science teacher, I believe that the following would benefit me as a teacher…



[1] Statements were: 1 …an increase in pay. 2 …more support from the Senior Leadership Team. 3 …more support from the community". 4 …more support from colleagues". 5 …a reduced workload. 6 …more resources provided, e.g., a textbook or workbook. 7 …having a mentor Agricultural and Horticultural Science teacher. 8 …being partnered up with a mentor within the subject when I was beginning my teaching career as an Agricultural and Horticultural Science teacher. 9 …more professional development opportunities, e.g., able to attend field days, B+L days.
[2] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).

It was identified with this subgroup of statements that being partnered up with a mentor within the subject when beginning an AHS teaching career (statement 8) had the highest mean Likert rating with 4.42, with 61.3% of respondents strongly agreeing with this statement, with an additional 22.6% agreeing. More professional development (PD) opportunities (statement 9) had the second highest mean Likert rating of 4.16, with 74.2% of respondents agreeing or strongly agreeing with this.

A reduced workload (statement 5) had no respondents disagreeing or strongly disagreeing with this statement, and 71% agreeing or strongly agreeing that this would be of benefit to them as an AHS teacher. Having more resources provided (statement 6)

also had a high proportion of respondents agreeing and strongly agreeing with this statement at 70.1%.

For the subgroup under the leading statement heading, *'As an Agricultural and Horticultural Science teacher, I believe that the following would benefit me as a teacher'*, statements 2, 3, and 4 are related to the support received from the senior leadership team (statement 2), community (statement 3), and colleagues (statement 4). 54.8% of respondents agreeing or strongly agreeing with statement 2, 41.9% statement 3, and 51.6% statement 4. Therefore, the data suggests that school leaders need to invest in professional learning, collaborative working environments, providing more resources, and reducing or spreading the workload among teachers.

4.2.6 Thinking about the next 5-10 years, I see myself…

This subheading from the Likert scale allowed a series of statements to understand where the respondents saw themselves within the career in the next 5-10 years. This allows for an understanding of potential movements in or out of the profession. Those respondents who indicate a possible movement out of the profession will be contributing to the supply shortage of AHS teachers and could impact the number of schools that are able to offer the subject to their students.

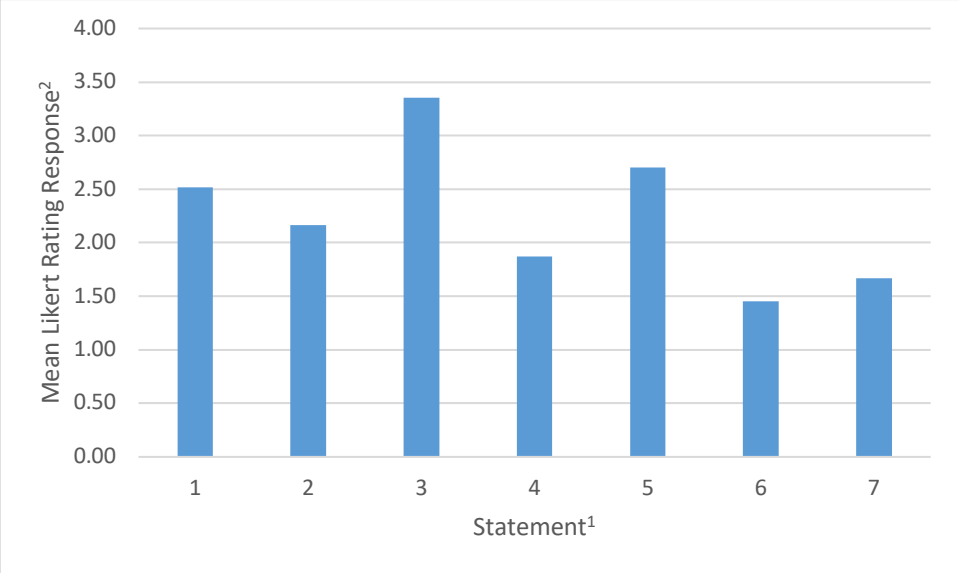
Table 4.4 Percentage of Likert ratings given, mean and median ratings, standard deviation (SD), and 95% Confidence Interval (CI) for the subgroup of statements under Thinking about the next 5-10 years, I see myself…

Statement	Likert Rating Response (%)[1]					Mean	Median	SD	95% CI	
	(1)	(2)	(3)	(4)	(5)				Lower	Upper
1 …leaving teaching and heading into industry.	41.9	16.1	6.5	19.4	16.1	2.52	2.00	1.589	1.93	3.10
2 …heading into a Senior Management or Leadership role.	48.4	12.9	22.6	6.5	9.7	2.16	2.00	1.369	1.66	2.66
3 …staying within the classroom and continuing to teach AHS.	16.1	6.5	29.0	22.6	25.8	3.35	3.00	1.380	2.85	3.86
4 …staying within the classroom, but not teaching AHS.	61.3	9.7	16.1	6.5	6.5	1.87	1.00	1.284	1.40	2.34
5 …not sure yet, but I know I will not be teaching.	35.5	9.7	22.6	6.5	22.6	2.70	3.00	1.601	2.10	3.30
6 …teaching overseas.	74.2	12.9	9.7	0.0	3.2	1.45	1.00	0.925	1.11	1.79

7 …being overseas, but not sure what I will be doing.	64.5	16.1	6.5	3.2	6.5	1.67	1.00	1.184	1.22	2.11

[1] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).
[2] Two-Sided p <0.001

Figure 4.7 Graph showing Mean Likert Rating Response for the subgroup of statements under Thinking about the next 5-10 years, I see myself…



[1] Statements were: 1…leaving teaching and heading into industry. 2…heading into a Senior Management or Leadership role. 3…staying within the classroom and continuing to teach AHS. 4…Staying within the classroom, but not teaching AHS. 5…Not sure yet, but I know I will not be teaching. 6…teaching overseas. 7…being overseas, but not sure what I will be doing.
[2] Likert Rating Response: Strongly Disagree (1) through to Strongly Agree (5).

Looking at the responses to where the respondents see themselves in the next 5-10 years, 35.5% of respondents either agree (19.4%) or strongly agree (16.1%) that they plan to leave the profession and head into industry (statement 1), with 29.1% of respondents agreeing or strongly agreeing that they are unsure what they will be doing, but they know they will not be teaching (statement 5). Positively, 48.4% either agree (22.6%) or strongly agree (25.8%) that they will be staying in the classroom as an AHS teacher (statement 3). Only 16.2% of respondents indicate that they agree or strongly agree that they will be heading into a senior management or leadership role (statement 2). This data suggests that a significant number of these respondents are intending on taking their skills and passion away from the classroom. Such a finding indicates the urgent need for school leaders to start addressing these issues and listening to the voices of their staff.

4.2.7 Reliability of the data collected from Phase One

Using SPSS Statistics, Cronbach's alpha was calculated, combining the 44 items (statements) from four subgroups that used the Likert rating scale. Cronbach's Alpha is

0.790 or 0.809 based on standardised items. Cronbach's alpha is used to measure reliability, or the internal consistency of a set of scale or test items. With Likert scale questions, a Cronbach's alpha of $0.9 > \alpha \geq 0.8$ is considered to have good internal consistency, with $0.8 > \alpha \geq 0.7$ acceptable internal consistency (Glen, n.d.). This therefore indicates that the data from this study has an acceptable internal consistency.

4.3 Phase Two Findings

Those who have been a teacher of AHS for longer than five years were invited to register their interest in participating in Phase Two of the study. Ten people expressed interest, which was double the number required for the semi-structured interviews. To ensure fairness of selection, the five selected were chosen through the randomised selection tool in Google Forms.

4.3.1 Teacher Identity

Participant A - Taylor

Taylor grew up in rural New Zealand and attended Massey University, graduating with a degree in Agriculture. Before heading into the classroom, Taylor worked in the agriculture industry and travelled overseas. Currently, Taylor is teaching at a decile 7, state co-educational school. In the next five years, Taylor envisages being in the classroom, however, the next decade will most likely bring a shift to other areas of Agricultural and Horticultural education. There is still "a role to play, but it won't be teaching."

Participant B – Morgan

Teaching at a decile 6, state girls' school, Morgan saw a need for the subject in the school and could see crossover with the subject currently employed to teach. Morgan had worked in industry in their specialist subject before retraining to be a teacher. In the next ten years, they will be looking at retiring. However, Morgan feels that there is a need to upskill the other teacher before this can happen to enable a seamless change over in the senior classes.

Participant C - Jordan

Jordan obtained a relevant tertiary degree before heading into the Agricultural industry. After retraining to become a teacher, Jordan now works in a decile 6 state boys' school. Regarding the next 10 years, Jordan indicated that leaving the classroom and not teaching the subject is not in the plan and would be "*disappointed if I left. I don't know if I left…I think that would be my own fault. Not the course's fault."*

Participant D - Quinn

Having always wanted to be a teacher, it was during tertiary studies in Environmental Science that Quinn realised that teaching the subject of Agriculture, is where the passion lied. Quinn is currently teaching in a decile 5, state co-educational school. Teaching is still in the future for Quinn, however what that looks like in 10 years' time is uncertain. Quinn emphasised they had no desire to head into the senior leadership space.

Participant E - Alex

Having completed a Bachelor of Science majoring in Agricultural Science at Massey University, Alex then went on to complete teacher training and headed straight into the classroom, with the majority of this time teaching AHS. Currently Alex is teaching at a decile 10 independent co-educational college. In the next five to ten years, continuation within the classroom, and potentially looking towards middle management i.e. a HOF role. Alex has no interest in heading into a senior leadership role.

4.3.2 Purpose, Reasoning and Motivation

The teaching of AHS is not unique in relying on the relational aspect of the relationship with students for learning, engagement, and motivation. This is essential for the teaching of any subject. All five participants identified that one of the main reasons for their love of the subject is the students they teach. It is the students that really make the subject, both in and out of the classroom. With so many of the participants' students being passionate about the subject, Alex relished *"opening up the kids to all the different possibilities"* and *"inspiring young people into new things",* while Morgan delighted in *"turning the kids onto a different way of thinking about Ag and Hort."* Taylor enjoyed *" seeing the success"* of students, both past and present, and *"knowing that you were a part of their journey."* Quinn shared that the *"extracurricular stuff you do with the students is really great for your relationships because they know that you are interested in them, and passionate."*

From the five participants interviewed, having a clear passion for the subject content, relevance of the subject, and real-life applications came through strongly with Jordan sharing, *"As the teacher you need to have a willingness and passion for the subject and therefore the industry*." Given that it is a dynamic subject that evolves and shifts constantly, Taylor enjoys that *"absolute relevance of it",* and that in the senior levels you are dealing with "*real time data and real time news"*, with Quinn mentioning that it is a *"discussion based, relevant science"*, that enables teachers to *"apply it to things that kids can actually see."* Alex *"really love[d] the content"* and because Agriculture and

Horticulture is a science, valued *"how the students are having to really think through the science behind the practices they are doing."*

Engaging with students through experiential learning whereby the students learn by doing, and then reflect on the experience, is the nature of how the subject is taught. All five participants shared the enjoyment and importance of taking trips, having guest speakers, and ensuring a combination of theory and practical within their teaching of the subject. Morgan commented that the subject allows for it to be *"student driven"* with *"peer learning"*, with Taylor sharing that *"you can always relate it to something tangible … it's real",* and it can cover *"a broad range of topic areas."* This highlights that these teachers are predominantly motivated by service and making a positive impact for their students.

4.3.3 Challenges and Constraints Faced

4.3.3.1 Workload

The AHS teachers interviewed acknowledged that the subject came with additional work. They also shared that this is what makes the subject engaging and enjoyable for the students. Quinn summed it up:

> W*orkload would be a problem for all teachers, not just Ag and Hort teachers. I guess one of the big differences with Ag and Hort is that you are managing all of the extracurricular plus the Ag and Hort resources, as well as the teaching*.

Adding to this, Alex said, *"Field trips are a massive workload in terms of running and organising."* Taylor shared the importance of *"mak[ing] sure that the diversity that the subject offers is actually enacted"*, and not getting caught up solely in theory that prevents *" doing enough farm visits or practical's"* with the students. Morgan echoed that *"you can't just do it out of a book."* Jordan said that the *"resources, for example, the tunnel house, or farm is an added stress…It has to be run and looked after by someone…doing it for love."* Three of the five participants spoke about the enjoyment they get from the extracurricular aspect of the subject, Jordan sharing, *"Young Farmers is something that I have really enjoyed",* and Quinn saying, *"it builds your connections with people in industry."* On top of the classroom teacher role, the extracurricular aspect makes teaching the subject humanly intensive, where teachers absorb and share all it has to offer for their students.

Agricultural and Horticultural Science is a subject that is constantly evolving and changing, and Alex shared that it was "*not just the assessment specs but also the context and the actual knowledge and understanding of the practices and everything tends to*

change, so need to update frequently." Taylor's thoughts on this included the additional workload required by those teachers who do not have either a relevant tertiary or practical background: *"My background and real-life knowledge guides the ability to do what I do or try to do. If I didn't have that background, I would be floundering*.'

Whilst more time would be advantageous, and four out of the five participants made comments on this, Alex shared the insight that *"I find workload hard, because it doesn't matter how much time you get, it's never enough time*.*"* However, this could be achieved through having a technician, as suggested by two participants, or the reduction of one class from the teaching load.

In addition to subject workload, participants indicated that the workload of teachers generally has increased. *"There is a lot more responsibility on the teacher"* (Quinn) and *"COVID-19 has increased our workload significantly"* (Alex). With students being the core purpose for teachers, Alex added that teachers *"need to keep a better eye out for students now…mental health has got a lot worse."* Comments by three of the five participants also suggested that students increasingly do not have the ability to think for themselves, and that they are more helpless in their learning. It was interesting that participants noticed this, as one of the New Zealand Curriculum key competencies is 'Managing Self' (Ministry of Education, 2020a), and this is associated with attitude, self-motivation and resilience.

These narratives suggest that meaningful learning experiences are created to benefit the students; however, they also allude to the additional preparation time that is required to create these opportunities. In addition, they highlight the challenges with an increase in responsibility for the classroom teacher. Therefore, school leaders need to be aware of the hidden time commitments that teachers just absorb to meet the needs of their students.

4.3.3.2 Perception

Perception of how the subject is seen by others such as the SLT, colleagues or the community was identified as a challenge. Many of the participants spoke of the subject being seen as a 'dumping ground' which negatively impacts its status in particular schools. There appears to be a lack of understanding and awareness of what AHS involves, with a *"confusion between the ITO and Ag Science"* courses in Quinn's opinion. Taylor shared the *"perception that only dumb people take the subject, and probably only dumb people can teach it as well"*, and Jordan sensed *"there's a perception that the old*

Ag boys, and the Ag teachers have, you know, carefree lark." There is also a lack of understanding or realisation by some that the subject offers a dual pathway for students. Taylor shared that the subject is *"not seen as prestigious, or the perceived prestige of being for example, a vet or a lawyer*."

All five participants spoke about how they have worked hard to shift the perception of the subject within their schools so it was not seen as a 'dumping ground' for students, even though, as Jordan put it, there is *"always going to be that stigma… we've just got to manage those perceptions and some things will change quicker than others."* Quinn adding, *"We have not diluted our academic course with unit standards, we provide a unit standard option"* and *"you can't put colleagues down if they are teaching some of the top kids in the school."* Morgan perceived that *"sometimes your colleagues don't really appreciate the practical subjects",* with Jordan echoing *"certainly that they don't understand the effort that goes into the trips et cetera."*

Over the past decade the primary industries have been working hard to improve the relationships with schools, and students, and also the perception of the industry. All sectors within the primary industries in New Zealand are needing more young people entering and choosing it as a career pathway. Jordan informs us that *"the mindset's changing there"*, but like anything it takes time. Three out of the five participants spoke fondly about their community being supportive of the programmes and being grateful for community support and connections.

4.3.3.3 Siloed

The findings identified a number of curriculum boundaries and in most cases the teachers found themselves siloed, being a single teacher of the subject in a school. Since AHS covers a range of curriculum areas, not cohesively fitting into one, it is important to *"make sure that they are actually part of a department, and not on their own"* according to Quinn. In many schools, the subject comes under the Science Faculty. Alex shared that being a part of a *"bigger department allows for streamlining of things, sharing the workload",* something that a siloed teacher is not privileged to. Being a part of a larger faculty also has the advantage of *"making sure that they are actually under someone who can support them, and they're not fighting their own battles*" (Quinn). As Taylor put it *"an isolated professional is not going to be functioning at their optimum, if they are not able to on a regular basis, touch base with others."* Interestingly, Jordan shared having to *"fight to get out of the sciences."* This was due to AHS being perceived as the lowest science in the hierarchy of science specialities offered. They are now seen as a

standalone subject which has helped the academic perception of the subject, and Jordan mentioned that *"there is strength of having small departments, not single person departments, when thinking about job satisfaction."*

Teachers who are the only subject teacher in a school can often find themselves with a lack of support, and this is where having another teacher to communicate with, who understands the subject, is of benefit. Quinn suggests *"getting in touch with HATA"* and finding *"someone close by that you can use to help you because you are going to need that support, whether it comes to moderation or resourcing, or how to teach certain things differently."* Adding support to this is Jordan, who noted the importance of having *"someone who you can bounce ideas off."* Teachers who come into the subject as new, either trained in the subject, upskilled, or swapped subjects, all come with the best intentions. However, as Taylor said, *"They haven't had the ability to walk alongside someone because they are the only teacher in the school…to actually help them with the transition"*, then they will struggle and find it more challenging than if they were to go into a school that already has a well-established AHS program. *"There's plenty of examples of those teachers that are in our association that have had to just teach themselves"* said Jordan. In an ideal world, when teachers first start teaching AHS, they would not be a single teacher in a school, but *"part of a large Ag and Hort department"* (Alex). In addition to this are the benefits of *"starting off at a school that has resources … as it will take the pressure off."*

4.3.4 Support for the Teacher

Avenues of support for the AHS teacher in New Zealand are limited. The HATA is critical in its role for supporting teachers around the country whether they are early, mid, or late-career AHS teachers. This network has played a pivotal role in the subject's success. The provision of PD is crucial. Through acknowledging that the content for the subject is constantly evolving, and that teachers seek ongoing PD that is relevant to the contexts that they teach in their local region, the HATA, universities and industry are working in collaboration to meet this need. Support can also be seen with additionally held roles, whether these be within school or contracted to various organisations.

4.3.4.1 National Professional Body - The Horticultural and Agricultural Teachers Association (HATA)

All participants believed that HATA has played a pivotal role in supporting them in a professional capacity, but also through the formation of a collaborative and collegial

network. Morgan shared, *"I use the website a lot, I would be lost without it. It's great for getting ideas and great for getting resources"*. Four of the five participants attended biannual HATA conferences, networking with AHS teachers from around the country. Jordan and Quinn shared their thoughts on the networking opportunities that occur at the conference: *"I love the conferences because they are social…. You get to know someone and figure out what they are doing"* and *"you get to talk to and see great people and things."* Networks formed across New Zealand through HATA conferences were seen as hugely beneficial, as Quinn put it, *"You have someone to ask for resources…. and people have asked me for stuff…gets a sort of community going."* This was particularly beneficial for those who are the only subject teacher in their school. As lifelong learners, attending conferences allows you to *"go out and you look at different farms and production systems that your region just doesn't have…build on knowledge and understanding"* according to Taylor. Alex reflected that the *"conferences are really well organised…definitely has expanded my knowledge."*

The HATA has a website contains a rich store of resources for teachers to utilise or adapt. As the subject has limited curriculum specific textbooks or workbooks, these resources are a huge support for those teachers who are new to the subject. Three participants' advice to new teachers is, as Alex stated, *"go straight to HATA"*, with Jordan echoing this sentiment: "*Just get into the association, get help and support if you need it as people generally want to help."* On top of this, HATA, in 2022, *" have been really key to setting up moderation buddies…getting people on board, and the support that they need"* (Quinn).

4.3.4.2 Professional Development

Professional development was identified as an essential and valuable area of support for AHS teachers. All five participants shared Taylor's view that PD *"needs to be continual, ongoing and often."* However, as Alex put it, *"everyone does it a little bit differently"* when it comes to their AHS programme, which can make PD difficult to tailor for everyone. With many AHS teachers not having a relevant tertiary degree or practical background in the subject, the PD available needs to deliver accessible content that is relevant and would be of benefit to their teaching programme, with Quinn suggesting a *"basic anatomy and physiology course which covers, digestion, reproduction, nutrition and livestock groups."* This would allow teachers to access learning and the content support necessary to teach the programme's content confidently to their students. Three of the five participants also suggested more PD around the NZQA standards, and how to unpack what is being asked, or where to go to find information relevant to both internal and external assessments. Whilst this information can all be found on the NZQA website,

knowledge of how to navigate around it to find information is needed. Unpacking of what the descriptor words mean, including what it looks like within context at the achievement levels of NZQA would be of benefit and be valuable for PD.

Findings indicated that businesses and personnel in the primary industries are not a barrier to when it comes to PD and support of the AHS teacher in New Zealand, with all five participants feeling supported. Morgan shared*, "You get a lot of community support, like we've got a very strong rural support network…. really keen to support you. In fact, you've got far too much support or people wanting to help at times"* and, in Quinn's view, *"the local businesses around, if you are trying to organise something, they are pretty good at coming and giving you a hand, or giving out resources, or inviting you out to their place."* However, it seems from two participants that at times industry personnel can miss the mark by not understanding how schools operate. For example, Alex shared, *"they offer up those packages of pre-done units…. appreciate what they are trying to do, but schools just don't work like that."*

Two participants also suggest that AHS teachers should subscribe to some of the great industry newsletters for example, AgLetter or Farmers Weekly, as it's a *"really good way to keep up to date and see what's on top"* (Quinn). Positively, three out of the five participants spoke about how good the Massey University PD Day was in August 2022, where Jordan said it *"was a real goodie. Where we all sat around in groups and spoke with experts"*, with Alex sharing *"being shown stuff that we could actually do in a school, and then we could adapt it to how we teach."* Quinn thought that the Massey PD was good for experienced teachers as *"we need ways we can consistently change our practice to make it better for the students."* Taylor shared a similar view, with regard to the

> *Teacher Day Out, not just for Agriculture and Horticulture teachers, where they go out and spend the day looking at different aspects of the industry, those are really useful. And the key thing there is that there is no cost to the teacher or the school. And yet there is a long-term awareness gain for the industry across a range of subject areas*.

Quinn suggested, after attending an industry conference this year, that industry could give *"the opportunity to teachers to do things like that, like maybe fund a couple a year. It is just good in terms of awareness around the industry and what they do", b*ecause as Alex put it, *"From a teaching perspective, the ability of your school to pay for you to go on PD affects you as a professional….We shouldn't be in the position, that if you are at a poorer school that you as a teacher can't get as good development. I don't think that's fair because it makes the gap wider."* The resources and development days that are put

on by industry and tertiary institutions are of great support to those who are teaching AHS. However, it is essential that all teachers get the opportunity to access these events, not only for their own development, but for the benefit of their students. Thus, members of the SLT need to ensure that they are supportive and encouraging of teachers attending subject specific PD.

4.3.4.3 Additionally Held Roles

In addition to teaching, four of the five participants were either Heads of Department or Teachers in Charge of AHS at their school. Further, four of the five participants have also held a variety of contracted roles with the NZQA and MOE. Morgan said, *"All those roles have helped…and contribute to my teaching",* while Quinn commented that this allowed the development of a completely different skill set, and Taylor enjoyed *"com[ing] into contact with some really good people from around the country."* This pedagogical leadership encourages collaboration between teachers in a strength-based inclusive approach, with effective learning happening when teachers work together to share their knowledge.

Within the curriculum area of AHS, participants can lead through various roles. However, three of the five participants shared that they have no desire to enter senior leadership roles, reasoning that this would mean they would have to reduce the number of classes they teach, and that they became a teacher to educate and be in the classroom with the students, not to manage people. When looking at the roles that the participants held in addition to their classroom teacher role, all in some shape or form have a positive impact on AHS as a subject, and therefore benefit the students who study it. Alex summed it up with *"I've never been a career path person, I've just more been an opportunist."* This indicates an authentic approach to their role in leadership, that they know what they stand for, and wish to achieve within that role. This highlights that AHS teachers seek leadership roles that are of benefit to the future of the subject and those students who take it, and not those more traditional leadership roles found in the formal hierarchy in schools.

4.3.5 The Influence of the Senior Leadership Team (SLT)

The five participants believed that the SLT can have a large impact not only on the teacher in their school, but the subject. This can be through how they perceive the subject, culture within the school, communication as a leader, and autonomy. *"They have to realise the value of the subject first and foremost",* stated Jordan. Taylor shared that *"a*

school has to look at the relevance of what it is teaching" and be *"brave about going about how to deliver for those students in terms of what they need."* Two of the participants noted the support that they get from their HOF, with Alex sharing that it is *"important that we make people within the department feel valued."* This reinforces the fact that the culture of a school is important when it comes to ensuring the best from the staff. Unfortunately, the participants shared that with the demands on the SLT they can often *"lose sight of how much work people on the coal face are doing, and what conditions for people are like"* (Alex). Morgan shared that communication is key, and that it needs to be reciprocal, in that the SLT needs to *"actually really listen to what you are saying"*, and Jordan believed they *"must look after their staff"* and *"back their Ag and Hort teachers to the hilt."*

Curriculum perception can have a large impact. Some schools have had issues in terms of the clientele that get placed into their classes by the deans or SLT, with it often being referred to as a 'dumping ground'. *"That's just ignorance...it's scary that those are some of the people that are going to be or are leading some of our schools,"* stated Jordan. Quinn shared that some *"don't have an understanding of what Ag and Hort actually involves."* A lack of understanding of the subject could be related to it being a specialist subject, with SLT members not being familiar with the subject either in terms of the content or exposure to it as a subject during their career thus far. Further to this, the SLT needs to give their teachers support when it comes to the *"decisions about the way they want to let kids into their class."* For example,

> *If they're running an ITO course and they have to send them out with the tutor once or twice a week, and that means that the kids need to have a certain level of behaviour to be in that class, then let them maintain that behavioural standard*,

with Quinn's advice being, *"Stay strong in terms of your requirements…make sure that you're firm and with your senior management."* The SLT can have a large influence on the perception of the subject within the school, and the community. By showing support and an understanding of the subject, they can help to shift the negative perception and stigma held by some people. However, the SLT as leaders, and in a role of influence, need to forge the way, and challenge the negative perceptions, when presented.

Within the traditional school system, the timetable plays an important role in the running of the school. It is often "*the constraints that are put on us*" (Jordan) that are a challenge to navigate. This is in reference to field trips or practical courses that complement the subject: *"I know that we have to pick and choose a bit, just with the inability to be able to get out of school a lot. You know you are restricted by the timetable."* Morgan echoed the challenge faced: *"Getting the students out of class to go and do some practical stuff*

is a real issue." A further constraint or challenge is resources, in particular, finances, for the teacher to run an engaging programme for the students. Quinn recommended allocating

> *money and a budget to be able to do the practical stuff … that makes Ag and Hort what it is, and the kids really enjoying it, because at the end of the day if you can do all of that, you'll have a good subject*.

These findings suggest ways in which the SLT might mitigate or reduce the constraints, to ensure an engaging subject for the students at the school.

It is evident from the five participants that the SLT can show support for their AHS teacher/s in their school by allowing and encouraging specialised PD. This might include support from a PD Day organised by HATA or industry, or going to another school, but ultimately it is about having the opportunities to meet with different teachers of the subject. As Quinn said, *"It means that those teachers, especially if they are isolated, that they're meeting other teachers and they're not working on their own as much, and they will get support connections."* This support for PD from a logistics standpoint needs to be prioritised by the SLT. As Taylor stated, it is important that *"the school is not going to say that the teacher cannot go due to needing to pay for a relief teacher."* Priority for this support for specialist teachers is not only an issue for those who teach AHS but is necessary for any subject teacher where they might be the only one in the school. These teachers do not have the luxury of a large department and collegial support in the school in which they teach and should therefore be encouraged by the SLT to seek this support outside of their school organisation.

4.3.6 The Importance of a Mentor

All five participants highlighted the importance of having a mentor when starting out in the subject. Taylor recommended that new teachers "*get alongside people who are doing it, experienced teachers, who can short-track the journey into knowing what makes that particular subject tick"* and Morgan reflected, *"I certainly would not have got into the subject as quickly or as easily if it hadn't been for this other teacher at one of the other schools here."* Four of the five participants were particularly grateful for the support they received. When reflecting on a mentor in their professional life, Morgan shared *"She was amazing. She brought all her resources. She really set me up. We moderated together so I could see her work, and then she helped me with mine."* Jordan's mentor was *"very helpful and he just wanted to make sure I was all good."* Both Quinn and Alex spoke about how they considered themselves fortunate to have started their teaching journey in schools with an established department and being able to work alongside experienced

AHS curriculum leaders. Quinn shared, *"They really helped me in terms of like, content and ways to teach things",* with Alex sharing, *"I was very well looked after."*

Having a mentor at school may not always be the case, and while the findings illustrated a positive influence within the subject, all participants recommended that any teacher starting out teaching AHS should be paired up with an experienced teacher close by. They believed this would ensure that those teachers are mentored or supported particularly during their early teaching career in the subject. Quinn shared that an ideal mentor is *"someone that they can go and see, someone that at the start of every unit can sit them down and talk them through what they need, show them how to do exams, show them what internals look like, helping with marking and moderation."* It is important that the mentor and mentee are suitably matched, because mentors might have certain strengths and/or expertise, and *"because different people are going to need different bits of support and will have different outcomes based on the mentee"* (Taylor).

Having access to a mentor, who is an experienced subject teacher is necessary for the mentee to get the support they need. According to Jordan, *"We need to get alongside each other"*, and make sure that we experienced teachers are *"helping with assisting others"* as *"we're all there for the common good."* However, it can be *"difficult to actively mentor someone who is not in your school"* as shared by Taylor. Four of the five participants spoke of the role that HATA played in setting up moderation buddies, with Morgan perceiving this as "*a really good step.*" Alex thought this initiative could be further expanded, where *"we could mentor"*, or do *"video conferences"* or, if both schools were supportive, meet in person as that *"requires a day of relief."* Quinn reiterated the support required from SLT as *"there wouldn't be many schools that you go into, and you are the only English, or Maths, or Science teacher."* This further highlights the need for experienced and motivated teachers mentoring in the subject area. Due to the constraints and structure of schools, plus teacher workload, it is often difficult for those in the mentor role to support the mentee to the best of their ability. As *"schools are very precious about their teachers and time"* Taylor suggested that mentoring might be "*a role that is required to be done by someone outside of the teaching role, but who has relevant teaching credentials."* In an ideal situation, this would be a full-time job, suited to someone who is experienced in the subject, and can therefore mentor and advise beginning teachers on their journey.

4.3.7 Future Outlook

With AHS teaching, the opportunities are vast due to the shortage of teachers in this subject area. The participants acknowledged there were more job positions than teachers to fill them in New Zealand and they could be selective about the location in which to base themselves. There are also plenty of opportunities to take on contracted roles with either the NZQA or MOE, which has professional benefits. This is on top of teaching a subject that is important and relevant for the New Zealand economy, but it showcases opportunities and career pathways within the primary industries for students. Jordan concluded that *"it's a subject that's unique in the fact that it's a national subject, a global subject, it's something that can offer so many different career pathways...it's got the practical and academic aspects to it."*

For those who teach the subject and have a relevant tertiary degree, it can be an easy switch between professions as there are *"few subjects where there is a directly aligned industry, where a lot of this knowledge and skill set can be just instantly applied."* Therefore, the move into industry can occur seamlessly according to Taylor. Another example of this is technology teachers who are qualified builders or carpenters and are also able to transition back into industry easily. Quinn echoed this view: *"We're competitive with industry. We are people that have Ag and Hort qualifications. We can flip into industry."* Unfortunately, this means that the education profession is competing against the primary industries for these individuals. The magnetic pull of industry for individuals in the teaching profession comes "*down to your working conditions",* Alex shared. Quinn also shared the insight that *"teaching has changed, kids have changed, and pay is not enough now to match industry."* Alex further shared that *"the thing is, until you are in the job...it is very hard to understand the mental pressures of the job."* The reality is those individuals are not leaving education because they are retiring. They are teachers who could keep teaching, who are choosing to leave.

The average age of AHS teachers is an aspect that is important to acknowledge. In response to those leaving the profession due to retirement, Jordan said, *"Let's hope that we can replace them. We need younger teachers"*, with Taylor suggesting:

> *Either we have to attract people with Ag and Hort skills and knowledge, or we have to put a system in place to upskill them. If they have teaching pedagogy ability but no subject ability to upskill them in a rapid way*.

All five participants brought up the need for tertiary institutions to play their part in the training of AHS teachers here in New Zealand. Quinn stated that it is a *"massive problem when only two or three of the Teachers College in New Zealand actually recognise it as*

a subject." Jordan, Quinn and Alex all suggested that it would be beneficial for the universities to attach a teaching degree or diploma to the undergraduate degree, just as students can do with an Arts or PE degree. In addition, Quinn suggests *"acknowledging their work in industry",* with Jordan saying, *"get around the stigma of everyone being paid equally… maybe for some subjects like agriculture…you have to get people out of industry to do it, so why don't we pay them more."* Both participants referred to technology teachers as another specialised subject that has strong industry links.

According to Taylor, *"if a combination of the industry and the government don't put some blunt instruments in there, the subject has been and will always be a bit tenuous."* Jordan when talking about recruiting new teachers into the subject area said *"that's a real issue for me as far as getting them in. There's not enough incentive."* Participants also suggested that the TeachNZ scholarships could have a percentage allocated for those coming in and training in the subject area of AHS. Quinn was of the view that:

> *To get more people into the primary industries, you have to get that interest, and you actually have to teach it at some level at high school, and the people that teach it are either going to put people on or put people off the subject*.

This highlights the need for more teachers to train and teach a subject that has been deemed of national significance by the government. Taylor aligned this with practices in other countries: *"In America they recognise this, and pay Ag and Hort teachers more, because they want them educating for the industry, not working in the industry."*

4.3.8 Summary

This chapter has outlined the analysis of findings from both Phase One and Phase Two of this study. The key findings have demonstrated that it is the students, and the subject content, that AHS teachers enjoy the most. Despite the challenges of factors such as workload and curriculum perception, it is with a strong support network behind them that new teachers to the subject remain in the profession. This support network highlighted a multi-faceted approach, with the HATA, PD, and support from the SLT all playing a vital role in ensuring the curriculum leaders sustained their professional careers within the school context. The next chapter discusses these findings in relation to the literature.

Chapter 5
Discussion

5.1 Introduction

This chapter provides a discussion of the research question *'What factors motivate and sustain the professional work of Agricultural and Horticultural Science curriculum leaders in New Zealand secondary schools?'* in light of the data collected during phase One and Two, and the literature reviewed in Chapter Two. It includes an acknowledgement of the shortage of Agricultural and Horticultural Science (AHS) teachers by the Horticulture and Agriculture Teachers' Association of New Zealand (HATA) and the shortage of secondary teachers in general by the Ministry of Education (MOE), and the relevance of the subject to New Zealand as a country economically, while exploring what sustains those subject specialist curriculum leaders in the profession.

Firstly, for AHS teachers, it is the students whom they teach that they enjoy the most, followed by the subject content which is ever-changing. These teachers have shown a huge passion for the subject and for inspiring the younger generation. Secondly, there is acknowledgement of the varying forms of support that contributed to their success in the profession, with discussion around the influence of a mentor and the senior leadership team (SLT). Thirdly, the leadership styles or approaches that the SLT apply, have an impact on teachers and their own leadership approach within the classroom.

5.2 The Teacher Shortage

With the reported mean age for AHS teachers in New Zealand being 55 years old (Allen, 2022b), there will be a supply issue as those teachers move into retirement. The mean age of participants from Phase One was 46.76 years. From the statistics provided by Education Counts (2021b), 63.9% of the secondary teachers in New Zealand are female, with 36.1% male. However, within AHS, the split is 53% female and 47% male (K. Allen, personal communication, September 16th, 2022). The findings indicated that a proportion of female teachers of the subject are often recruited to 'step up' into the role and therefore required to upskill in the subject area, while their male counterparts tend to have a relevant tertiary degree or practical background in the subject. When it comes to attracting new AHS teachers, those who are already within the teaching profession should be considered along with what parameters or support networks can be put in place for them to upskill and be successful.

A study from Floyd (2020) illustrated that the most common reason for Agriculture teachers leaving the profession was retirement, and coming in third highest was looking to move into industry. The skill set of AHS teachers who have a relevant tertiary background makes them very desirable to industry, and as Quinn said, *"We can flip into industry."* Elliott et al. (2017) wrote that opportunities within the primary industries are vast, and often with a better salary and working conditions. Research from Ismail and Miller (2021) found that retirement accounted for less than one third of departures from the profession, but the supply of new teachers is not enough to meet the demand.

Statistics from Ministry of Education (2022) showed that entry rates into secondary teaching continued to decrease in 2021, with entry rates being the lowest recorded since 2005 at 7.6%. For comparison, in 2005, entry rates were above 13%. Rates for leaving secondary teaching have consistently been just above 8% since 2014, with a significant decrease in 2020 those leaving to 6.9%.

Insight from participants in Phase Two highlighted the fact that there is normally only one AHS teacher graduating and coming into the profession every year. The replacement rate is not high enough for those exiting the profession for retirement, moving to industry, or other reasons. 48.4% of respondents (15 respondents) indicated that they will be remaining in the classroom as a subject teacher in the next 5 to 10 years. Therefore, demand will only increase as the number of students taking the subject has been consistently over 10,000 since 2007 (Education Counts, 2021a).

It is evident that there is a shortage of specialist teachers not only across New Zealand, but also in countries around the world such as Australia, Canada, the United Kingdom, and the United State of America (Brinck & Maher, n.d; Hasselquist et al., 2017; McConnell, 2017; Solomonson & Retallick, 2018; Sullivan et al., 2019). This is not a new issue but a persistent one, and New Zealand is in direct competition with those other countries to attract teachers (Couillault, 2022). In a press release from Lagen (2022) upon speaking with Melanie Webber, the PPTA Te Wehengarua President, it was shared that more secondary teachers are needed, particularly in the subjects of Maths, Science, Te Reo and Technology, with the Ministry of Education (2020) echoing this. The Secondary Staffing Survey (New Zealand Post Primary Teachers' Association, 2018) report conducted by the PPTA also identified these hard to staff subjects, and mentioned AHS separately to that of science. Because of this, Witton (2022) reported that there are huge numbers of teachers who are having to teach outside their specialist subject area, with Redpath and Allen (2019) sharing that teachers are often required to teach Agriculture and/or Horticulture without a specific qualification in the subject due to the

low number of specialist AHS teachers. As alluded to by Taylor, having an agricultural degree or background is very helpful. Unfortunately, there are not many subject teachers with an Agricultural or Horticultural related degree, with many having science-based degrees (Redpath, 2018).

For AHS teachers in New Zealand, there are limited curriculum specific textbooks or workbooks compared to other subject areas. With many of these current teachers not having either a relevant tertiary degree, or background knowledge, they are having to upskill, and upskill quickly, which is a challenge. The findings highlighted that those teachers would find a subject specific textbook or workbook helpful and of benefit to them, and on the Likert scale it was the statement that was least in agreement with what respondents enjoy about teaching the subject. However, the production of a textbook or workbook is not practicable due to the continual changes in industry. The small yet diverse curriculum area also makes it not economically viable for publishers (Allen, 2022b).

Teaching has become a complex profession, with professional practice and identity now shaped by moral and political responsibility (Flannery, 2019). The landscape of teaching has changed and, as Mockler (2005) pointed out, there is concern over policies and regulations set by governing bodies being rigid in nature, therefore not allowing the evolution of teaching practice. Thus, the SLT need to have this in the forefront of their mind when structuring schools and implementing school initiatives. Flannery (2019) echoes the same thoughts over a decade later, suggesting that “standards are often viewed as an opportunity to control educational contexts through the rigid requirements of student learning outcomes and the need for teachers to constructively align teaching practice with the specified learning outcomes” (p. 42). Quinn echoed the view that over their time teaching, there has been more responsibility placed on the teacher.

The students in the classroom have also changed, with Alex sharing that with mental health issues on the rise, teachers need to keep a better eye out for their students. Subsequently, teachers are being placed in high-risk situations that they are not trained to deal with. The SLT need to be actively taking steps to support their teachers but also amplify their teacher skillsets. Three of the five participants observed that during their time in the classroom students have become more helpless in their learning and have a reduced ability to think for themselves. The construct of learned helplessness has become a more noticeable emotional issue in education (He, 2021). Therefore, the role of the teacher has a huge impact on students throughout their schooling journey as teachers help learners to be motivated through providing a supportive environment.

Furthermore, it could be useful for the SLT to be taking intentional steps to support teachers with these challenges. A supportive context through caring has a positive influence on the relationship between teacher and student (Bowling et al., 2022). Learned helplessness has been in the forefront of education researchers around the world with its stimulus on student success, motivation, and commitment to learning, and the impacts that this can potentially have for the student, but also administrators, teachers, and society (He, 2021; Heilman, 2021; Qu & Koay, 2022; Spitzer, 2021).

5.3 Leading Learning

By leading learning in the curriculum area, it is the students, and the relationships formed with them, that sustains motivation and engagement in the profession. This appears to be consistent across the globe, with the findings from this study providing additional evidence in support of the existing literature (Adams et al., 2019; Bowling & Ball, 2020; Rice et al., 2011; Wronowski, 2018). This motivational belief was found regardless of the career stage that the teacher is in (Bowling et al., 2022), that they are found to have a high commitment to their work and their students (Clemons et al., 2021). Both Phase One and Phase Two data supported this, with student relationships having the highest mean rating on the Likert rating scale of 4.61. All five participants from Phase Two echoed that the reason they enjoy the subject is the students they teach. Relationship building with students is a significant motivational reason for many AHS teachers and is used as a strategy to enhance the learning environment (Bowling & Ball, 2020). The literature supports the positive relationship between teacher quality and student success (Bradley & Loadman, 2005; Sorensen et al., 2014), and how these relationships are motivating for students and leading their learning (Bowling et al., 2022; Wronowski, 2018). Encouragement through self-regulation aids in developing relationships which has a positive influence on the students' success (Bowling & Ball, 2020). It is those teachers who are student-focused who are more motivated to remain in the profession (Clark et al., 2014), and continue to lead in their curriculum area. Affirming what was found in the Phase Two findings, research conducted by Clark et al. (2014) found that there was a transformative shift in mid-career teachers which lead to career sustainability.

Shoulders and Myers (2011) found that agriculture teachers do it for the love of the subject matter. Alex *"really love[s] the content"*, and Jordan summarised that *"as the teacher you need to have a willingness and passion for the subject".* Both Ponnock et al. (2018) and Brunetti (2001) affirm this. Findings from this study further support this, with high Likert scale means for 'the ever-changing contexts of what I teach', and 'that I can create my own program'. Delving deeper into the reasoning for this was Taylor's

conviction of the *"absolute relevance of it"*. Roberts (2017) similarly found that each teacher held a "passion for and dedication to the agricultural education profession" (p. 7).

Teachers who promote and encourage lifelong learning champion the learning process (Flannery, 2019). The teacher has transformational leadership attributes that they model to their students as they show their learning journey. Empowering leaders display inspirational motivation, and show resilience through challenges involved to get success (Bass & Riggio, 2006). Through a relational approach, working alongside other passionate teachers was a common motivator amongst the Phase Two participants. They recalled how conversations with other like-minded individuals continue to inspire and spark their motivation in the subject and how they lead in this subject area and teach it to their students. This increases self-efficacy and in turn, job satisfaction (McKim et al., 2017; Sass et al., 2011; Song et al., 2020). Kitchel et al. (2012) found similarly that teachers who felt inspired by others' accomplishments and successes were more likely to experience increased job satisfaction. Flannery (2019) wrote that there is a significant proportion of teachers who are intrinsically motivated and sustained in their teaching role. Intrinsic motivation factors generate an increased feeling of well-being in the individual. Clark et al. (2014) also found that job satisfaction increased among teachers who remain in the profession. Thus, these are the attributes that members of the SLT need to be fostering in staff.

Working conditions will have an influence on a teacher's professional wellbeing and overall job satisfaction (Kelchtermans, 2017), yet teachers have minimal control over their working conditions (Ansley et al., 2019). A study from Harrell et al. (2019) found that school culture may also affect a teacher's decision to stay at that school or leave the profession. In Phase Two of this study, Alex shared, *"I don't think you can blame money…it's down to working conditions"* when it comes to people leaving the industry. Characteristics of positive working conditions include support from the SLT, time to complete responsibilities, beneficial PD, allowing teacher autonomy and adequate resources (Ansley et al., 2019; Booth et al., 2021; Elliott et al., 2017).

5.4 Curriculum Leaders and Professional Identity

An individual's professional identity is influenced by both social relationships and social expectations (Shoulders & Myers, 2011). A study from Shoulders and Myers (2011) suggested that teachers of Agriculture are influenced to do so by their background. Those experiences shape the relationship with their subject matter, which influences

their professional identity. Roberts (2017) used the analogy of the black swan to describe agriculture teachers. “Though proud of their distinctiveness, the black swans also strive to make significant contributions to their flocks – the agricultural education discipline” (p. 9). Shoulders and Myers (2011) wrote that Agriculture teachers who are committed to their profession maintain a united front and ‘stick together’ through supporting each other. All five participants from Phase Two spoke of their appreciation of the HATA and the importance of having this supportive community. The HATA has played a crucial role in supporting them, not only in a professional capacity, but also through the collegial networks formed.

Within the teaching role of an AHS teacher, there are many responsibilities, and a large amount of service attached to the leadership and teaching of the subject area. It is through this service that recognition and validation from others is evident. This can be seen through student growth and achievement, acknowledgement from the SLT, fellow colleagues, and within the community, all of which have a positive impact on job satisfaction (Van der Vyver et al., 2020). This can play a pivotal role in how a teacher feels about their competence and value, which also impacts the students they teach (Traini et al., 2021).

Roberts (2017) also found that a source of pride in their careers was engaging students, and helping them discover a passion for Agriculture. Comments from participants in Phase Two such as *“inspiring young people into new things”*, *“knowing that you were a part of their journey”*, and *“you get a lot of community support”* further highlight this. Roberts (2017) added that it is not just the academic side, but the ability to guide students through life decisions, or situations that allows teachers to feel that they are making a significant contribution to those who they teach. Participants from this study spoke about the enjoyment of the relational aspect of teaching the subject, and how they really get to know the students through teaching them over consecutive years and through the extracurricular aspects that the subject offers.

Being responsible for the extracurricular aspects of the subject, for example the Young Farmers Club, directly links back to their students being the reason that sustains AHS teachers within the profession. Three of the five participants in Phase Two of this study shared the enjoyment that they get from subject related extracurricular activities. Whilst taking up time outside of the teacher’s classroom role, these help the subject and are of benefit to students. This also showcases teacher passion through social modelling and reinforces the interest that the teacher has in the subject, which can build the students’ self-efficacy (Bandura, 1997). Through being a curriculum leader and having an active

interest in their students outside of the classroom, the relationship can be further developed which will only benefit the students' learning, engagement, motivation and consequently their success. Quinn affirmed that the *"extracurricular stuff you do with the students is great for your relationships because they know that you are interested in them, and passionate".* Findings from this study support those from Bowling et al. (2022): "Teachers identified these extra hours as a critical component to developing student relationships...Due to this extra time spent with students, teachers were able to develop strong relationships and use these relationships to better understand students" (p. 8).

The ability to engage with students by being genuine and inspirational, along with being a role model, are transformational leadership qualities (Al Barwani, 2018; Bandura, 1997; Bass & Riggio, 2006; Humphreys, 2005). The positive effects of transformational leadership in the classroom are consistent with leadership elsewhere, in that transformational leaders will have a positive influence on students' effort, satisfaction, and performance (Currie & Lockett, 2007). Participants in this study also actively sought out and took on leadership roles that aligned with the subject, rather than the more formal leadership hierarchy in the school system. From Phase One, all but one of the respondents held other roles linked to the subject of AHS in their school or within New Zealand, with four of the five Phase Two participants having active roles with NZQA, and/or the MOE. This shows a dedication to leading within the curriculum space and servant leadership characteristics where the needs of others are put ahead of the individual (Humphreys, 2005). This intrinsic motivation influences the self-efficacy and agency of the curriculum leader, with self-efficacy being an indicator of a teacher's professional identity (Gates et al., 2020). It is through engaging with leadership roles that align with the subject that teachers can have the largest influence and directly impact those taking the subject.

The formal leadership hierarchy found in the school system did not appeal to three of the five interview participants because taking on SLT roles would mean less time in the classroom. The SLT utilise both transformational and transactional attributes in their roles and can have a positive effect on professional wellbeing (Van der Vyver et al., 2020); however, less time in the classroom reduces the relational aspect with the students they teach. The AHS teachers in this study appear to embrace transformational leadership attributes and are leaders of learning in their classroom. Booth et al. (2021) echoes the perspective that an increase in leadership and responsibilities would decrease effectiveness within the classroom. In addition, Kelchtermans (2017) suggests that often the only career progression is to move vertically. However, many teachers are not seeking this traditional career movement. Only 16.2% of respondents from Phase

One indicated that they would look to head into the SLT in the next 5-10 years. Leading learning and leading in the curriculum space adds to the professional identity of AHS teachers. It is through this professional commitment that teachers' growth occurs, which has a positive impact on teacher self-efficacy (Räsänen et al., 2020).

There are two related constraints that influence a teacher's ability to lead in their curriculum area effectively: subject perception and hierarchy of the subject within their school. Communities play a vital role when it comes to what they perceive as important. As Dhindsa and Md-Hamdilah (2015) wrote, "the word *agriculture* has been used synonymously with the word *farming*" (p. 442). This societal perception is linked to poor knowledge and understanding of the subject, and means that people do not always fully realise its importance. Often it is not understood or acknowledged that the subject of AHS spans multiple curriculum areas including science, business, and technology. Findings from this study highlighted that there appears to be a lack of understanding and awareness of what the subject entails and how it differs from the Primary ITO units or courses that some schools offer alongside outside partners. The subject is also in direct competition with other subjects and career pathways that students, administrators, parents, and the community view as more prestigious and promising, such as veterinary science, law, or medicine (Dhindsa & Md-Hamdilah, 2015). Taylor from Phase Two in this study echoed this thought.

The curriculum hierarchy sits at the meso level within the school. Subjects such as agriculture or PE, often struggle to gain acceptance among the traditional academic curriculum (Shoulders & Myers, 2011). Over 50% of respondents in this study identified that they found being overlooked as a subject a challenge. This makes SLT and BOT support for the subject essential (Redpath, 2018). As Taylor commented, the SLT needs to "*look at what it's actually teaching, and the relevance of what it's teaching. And then be sometimes really brave about going about how to deliver for those students."*

It was the negative comments and opinions from others about the subject that were identified as a challenge faced by respondents in Phase One of this study. They felt that more support from the SLT would be of first and foremost benefit, followed by that of colleagues, and then the community. Over 50% of respondents agreed that more support from the SLT and colleagues would be of benefit, and found negative comments and opinions from others to be a challenge. Delving deeper into this finding in Phase Two, three of the five participants felt that being a part of the Science Faculty meant they were viewed more academically and had more support when it came to their subject; however, one participant shared that even though they were within the Science Faculty, hierarchy

was still present with AHS being viewed as the least academic science. Phase One findings indicated that the perception that the subject is a 'dumping ground' for those students is still a challenge that many have either experienced or are currently faced with in their schools. Positively, all five Phase Two participants spoke about how the perception of the subject has changed at their schools. It is no longer seen as a 'dumping ground', with them as the curriculum leader and, in many cases, the community working to change that perception. The stigma is being challenged (Roberts et al., 2007), and it could be suggested that the SLT within the school continue to work to address this to support their teachers.

5.5 Nature of the Subject

Agricultural and Horticultural Science programmes enhance learning experiences to positively influence the growth and development of the student (Blackburn et al., 2017). These programmes, whilst different between schools and regions have a few things in common in that they all allow experiential learning, the opportunity to collaborate with peers, and include farm visits, guest speakers and practical skills, all of which complement the theory behind the subject. Agricultural and Horticultural Science's experiential approach aligns it with other tactile subjects such as STEM and physical education (Shoulders & Myers, 2011). Many teachers in this study agreed that they liked the high degree of autonomy in the subject, the practical aspects, and that they could decide what industries and products to focus their teaching on. This finding supported the research from Solomonson and Retallick (2018). When compared to other academic subjects, it appears that the degree of autonomy AHS teachers have is relatively higher (Shoulders & Toland, 2017). Research from Rice and Kitchel (2017) proposes that students learn best through hands-on experience and real life application, which leads to an increase in student engagement and therefore student learning. Redpath (2018) suggests that what sets the subject apart from most other secondary school subjects is the presence, in many schools, of the vocational learning opportunities that the subject offers. Supporting this are findings from Phase One, with 64.5% of respondents strongly agreeing with the statement '*As an Agricultural and Horticultural Science teacher, I enjoy...that the subject has career pathways attached to it'*, and 54.8% strongly agreeing with statement '*As an Agricultural and Horticultural Science teacher, I enjoy... the practical components'.*

Teaching can be a demanding profession, regardless of the specialist subject taught. Teacher workload is not only an issue here in New Zealand but also overseas, and one of the main factors leading to teachers leaving the profession (Gilman et al., 2012;

Solomonson & Retallick, 2018). This study provided supporting evidence that workload is the one of the main challenges faced by AHS teachers in New Zealand. Torres (2008) suggests that the workload demands of an Agriculture teacher are greater than most secondary school teachers. This presents a very real challenge and needs to be addressed to ensure experienced teachers remain, as a loss of these teachers could have an negative influence on student learning (Crutchfield, 2013; Eck et al., 2019; Sims, 2020). Agricultural and Horticultural Science teachers, on top of their classroom demands, are often responsible for many associated co- and extracurricular activities, including field trips, organising work placements, and managing resources such as the tunnel house or the farm. All five participants from Phase Two shared the satisfaction they get from seeing students utilise these resources and the enjoyment they get from participating. They reiterated the importance of taking trips, having guest speakers, and ensuring a balance of both practice and theory when teaching the subject. These things are what makes the subject the best it can be for the students. By being relevant and real-life, students can see themselves within the learning process.

Kitchel et al. (2012) wrote that this subject is even more demanding given that the role of an Agriculture teacher is multi-faceted. This increases the workload that these teachers deal with regularly. Research from overseas shows that trends for job responsibilities for agricultural teachers have increased. This can make it difficult to manage the various responsibilities of the profession whilst ensuring a work-life balance, which could lead to burnout and the teacher choosing to leave the profession (Booth et al., 2021; Elliott et al., 2017; Floyd, 2020; Sorensen et al., 2014; Traini et al., 2021). However, there is a normalisation, or acceptance, of this extra demand in workload that came through from this study. That it is the nature of the job and goes back to what sustains teachers; they do it for the students. This supports the findings from Sorensen et al. (2017) that normalisation can cause the blurring of work and home boundaries and a decrease in work life balance.

Time is a valuable commodity. Traini et al. (2021) found that to “meet the demands of various individuals, fulfil the responsibilities of their jobs, and provide students with various opportunities” (p. 68) took many hours, yet there are only so many hours in the day. Findings from this study supported this with acknowledgment from the participants that more time would be advantageous, but as Alex commented, *“It doesn’t matter how much time you get, it’s never enough time”*. The insight from this study was echoed in a study by McIntosh et al. (2018) which revealed that “with so many moving parts to a quality program, many teachers indicate that there are just not enough hours in the day to juggle all of them” (p. 252). Research conducted by Smalley and Smith (2017) found

that mid-career teachers identified the largest issue preventing them from “becoming the teachers they wish to be was a lack of time or time management challenges” (p. 286). In their work, Wronowski (2018) found that participants felt frustration due to an increase in responsibilities as that time encroached on the time that they could spend on their teaching practice. Both Morgan and Alex from this study echoed that there is a lack of understanding about the extra responsibilities being placed onto teachers by the SLT and the time that collectively they take up.

Due to the diverse nature of the subject matter including the constantly changing content, AHS teachers are expected to keep up to date with a variety of things from management practices and market trends to regulations and legislations. This can be a challenge, but is crucial to ensuring they are meeting the needs of their students (Lough, 2019; Roberts, 2004). It is important that these teachers are leading through learning and social modelling to their students being a learner as well. Whilst the evolving nature of the subject and its content was identified as an aspect of teaching that participants from this study found enjoyable, it does come with additional time commitments. Participants from Phase Two of this study shared that they feel supported by industry, and that they appreciate the newsletters or emails that keep them up to date with changes in the industry. Findings from this study supported those from Smalley and Smith (2017) who echoed that teachers found industry involvement and readings beneficial to them staying professionally prepared for their students.

Another challenge identified from this study in both phases was the issue that teachers are often siloed as a single teacher of the subject in a school. Single teachers delivering the subject tend to be the critical factor as to whether the learning programme remains (Redpath, 2018). Being a single teacher in a school poses professional challenges when it comes to securing appropriate support for the subject, and personal ones in that having another teacher who understands the subject and with whom they can communicate is of benefit. A teacher going into a school that already has an established department with resources, or a department where there is another teacher or teachers of the subject is an advantage. Reflections from two of the Phase Two participants showed how grateful they were to go into an established department as they had experienced teachers who were more than willing to mentor them, helping with resources, assessments, and alternative ways to teach things. This assisted them to develop their leadership over time. If this is not possible, ensuring that the teacher has an experienced AHS teacher nearby as part of their support network is important for their success in the role.

5.6 The Value of Support

Support is needed as teaching is a demanding and complicated profession (Tummons et al., 2016). Valued supports include mentoring, and professional development, both of which help to increase self-efficacy and job satisfaction. A mentor who embraces transformational leadership attributes will have a positive influence on their mentee, and it is through PD and collaboration that will reinforce a teacher's professional identity.

5.6.1 Mentor

Findings from both Phase One and Two of this study strongly affirmed that having a mentor teacher is of huge importance and benefit to a teacher new to the subject feeling supported, thereby reducing the likelihood of them leaving the profession. The highest mean in the Likert scale was for the statement, *'I believe that the following would benefit me as a teacher…being partnered up with a mentor within the subject when I was beginning my teaching career as an Agricultural and Horticultural Science teacher'*. Four participants from Phase Two attributed their success through their first years teaching the subject to having a mentor who was an experienced teacher of the subject, two of whom were at their school, and two who were from schools in the same region. This reinforces Disberger (2020) argument that mentoring relationships can be highly impactful. Findings from this study support Hasselquist and Graves (2020) where it was found in this study with mid-career teachers identifying that they would not have been successful without the support they received at the beginning of their teaching journey. A good mentor encompasses many of transformational leadership attributes. It is by working with the mentee that a transformational leader can increase the mentee's self-efficacy through encouragement (Easterly III, 2020). They motivate, and guide through inspiration, whilst creating high expectations which they model (Currie & Lockett, 2007). This has a positive impact on the mentee's work performance (Bass & Riggio, 2006). Beginning AHS teachers face the issue of isolation, and a sense of feeling overwhelmed, not only their classroom duties, but also in fulfilling the additional roles that the subject requires of them (Tummons et al., 2016). It is through mentoring that they can get the support they need, whatever that may look like, as each teaching journey is different. Mentoring relationships vary along a continuum of quality (Tummons et al., 2016), and as Disberger (2020) suggests, a beginning teacher should have multiple mentors; a peer mentor, an agriculture mentor, and a school-based mentor.

Given the workload of current AHS teachers, and time constraints faced in schools, the SLT should consider and prioritise how a mentor is able to undertake their role effectively (Rhodes et al., 2004). The SLT should acknowledge and emphasise the importance of

the mentor and mentee relationship (Tummons et al., 2016). However, the formal structure found within schools and their already established mentoring programme may restrict the formation of a high quality mentorship that would best be of benefit to that teacher (Tummons et al., 2016). Findings from this study suggest that it is difficult to actively mentor someone who is not in your school. It takes commitment from both parties for mentoring to work. Shoulders and Myers (2011) expressed that the SLT should support mentoring, through fostering collaboration which will have a positive impact on student learning whilst supporting teachers in their career. In 2022, the HATA began a moderation buddy programme and the benefit of this was highlighted by the Phase Two participants. The HATA is a voluntary organisation, as is the role of the moderation buddy, with participants explaining that they do it for the good of the subject, and that they had someone to support them when they first started. It is their way of being able to give back and grow as leaders in the curriculum area, modelling this to others. This reinforces the service aspect of the professional identity of the AHS teacher as a curriculum leader.

Through engagement with a mentor, a close collaborative partnership can be formed which allows support and assistance where needed, and aids the transfer of teacher learning to student learning (Rhodes et al., 2004). Findings from this study highlighted the importance of the partnership between the mentor and mentee in ensuring that the mentor's strengths, experience, and teaching programme align with the mentee's vision to enable the mentee to flourish. Having a mentor who is a curriculum leader and who can inspire others through curriculum knowledge and community partnerships is helpful (Al Barwani, 2018). Rice et al. (2011) wrote that "effective mentoring programs can raise teacher retention rates by improving their attitudes, feelings, and instructional skills" (p. 111). It is the mentor teacher, a leader in the subject, who has an influential role on their mentee and will adjust their approach to fit their needs (Henning et al., 2018). This will encompass developing effective reflective practices as it contributes to professional self-efficacy (Ovenden-Hope et al., 2018). Through social persuasion, a good mentor can boost self-efficacy, not only through role modelling but by being a trusted voice of encouragement. They may also help their mentee recognise opportunities in which they demonstrate competence, aiding reflection (Bandura, 1997). With the mentor embracing transformational leadership attributes, they will encourage the mentee to look for opportunities, help with challenges, and perceptions (Humphreys, 2005). They will be able to provide a personalised approach which will empower and help the mentee to develop their potential. The mentor, and their transformational leadership traits will have a lasting and positive impact.

5.6.2 Professional Development

All teachers benefit from PD opportunities, and these rate highly amongst all career level teachers (Roberts et al., 2020; Thobega, 2003; Wang et al., 2020). Regardless of their career stage, challenges will be faced, and it is important to ensure that the PD available meets teacher needs (Sorensen et al., 2014). Unfortunately, due to the small-scale size of the AHS, school-based PD often focuses on larger mainstream areas within the curriculum. This means that AHS teachers are dependent on the HATA, industry and tertiary institutions for PD opportunities (Sorensen et al., 2014). PD must be varied as AHS teachers come with different backgrounds and experience. From this study, it was evident that more PD was desired, with 74.2% of respondents agreeing that this would be of benefit to them as a teacher.

With the ever-changing and evolving nature of the subject, continuous PD and upskilling is crucial. There was a consensus from the five participants in this study that this needs to be on-going and often. Teachers want to improve their subject knowledge and expertise in an effort to provide quality learning for their students, and improve student success (Shoulders, 2018). Findings from this study highlighted that industry was not a barrier when it came to PD, with Taylor sharing that *"industry itself is better now at viewing us as a key component of their industry"*. Support from industry greatly influences a teacher's commitment and motivation to remain within the profession (Elliott et al., 2017). Participating in industry-associated PD also models to students that teachers are also learners keen to expand their knowledge and understanding, which can have a positive impact. As Traynor (2011) wrote, "students had a higher degree of respect for me as a teacher with my industry-linked professional development" (p.13). Community support was also acknowledged in this study, with three of the five participants sharing how appreciative they were of their community, and the support that they receive for their programme.

In addition to a mentor, findings from Phase Two illustrated how thankful and appreciative teachers are for the subject association (HATA), and the critical role that they play in supporting AHS teachers who are curriculum leaders in classrooms around New Zealand. This is not only in a professional capacity through resources and PD, but also creating strong collegial and collaborative networks. It is networking opportunities that provide a chance for teachers to reenergise by talking and sharing with other teachers (Smalley & Smith, 2017). It was suggested by Thobega (2003) that PD from the subject association is highly beneficial to those early career teachers. PD should

ideally be part of a broader process of continual learning for all teachers (Mourão, 2018), and supported by the SLT (Mourão, 2018).

Authentic collaboration in a supportive group environment reinforces a teacher's professional identity through creating change in their perception of themselves during personal and shared reflection, but is also a catalyst for professional growth (Rhodes et al., 2004). Four of the participants shared that the PD day put together by the HATA, Feilding High School and Massey University was one of the best PD opportunities that they had been a part of. The reason for this was that networks were nurtured, and teachers were shown ways in which concepts could be replicated and taught in their school using a science laboratory and basic equipment. This is of benefit to both beginning teachers and experienced teachers as they are always looking for ways to change their practice to make learning better for their students.

A teacher is more likely to engage with PD if they have increased self-efficacy as this has been associated with motivation and commitment within their role (Ellison et al., 2021). It was Rinke (2011) who identified that teachers who prioritise PD also want to work in an environment that supports their PD goals and needs. Findings from this study indicated that more PD is wanted by teachers. Examples from participants in this study included PD around interpreting standards and assessments, upskilling of content knowledge, and learning new ways to teach concepts through practical's. The SLT and MOE need to prioritise this support from a logistics position and regardless of a school's decile or region that a teacher teaches in, the PD opportunities available need to be equitable for all. It was (Allen & Sims, 2018) who wrote that the more supportive and forethinking a school is regarding PD, the greater the expertise gained, and the more success within the role. This has a direct impact on that individual staying in the profession.

5.7 The Influence of the Senior Leadership Team (SLT)

Leadership is not solely based on great operational ability, as leading is not the same as being a leader, but being a leader is about understanding how to motivate those around you (Dweck, 2008). It is abundantly clear that the SLT can have a significant influence, positive or negative, on the culture within their school. This has a direct impact on the teacher's professional wellbeing and may affect their decision to stay at that school and within the profession (Ellison et al., 2021; Harrell et al., 2019; Kelchtermans, 2017; Van der Vyver et al., 2020). It is components of the school culture, for example support from administrators and colleagues, that affects teacher self-efficacy and overall job

satisfaction (Hasselquist et al., 2017; Heineke et al., 2014). Research from Sims (2020) and Ansley et al. (2019) both indicate that the perception a teacher has of their SLT influences their job satisfaction. This study supports those findings that more support from the SLT would be of benefit to curriculum leaders. The more effective the SLT are at creating positive working conditions and school culture, the greater job satisfaction is likely to be (Grissom & Bartanen, 2019).

A significant challenge for leadership is to build, develop and sustain a school culture that focuses on the continual reflection and improvement of programmes, capabilities and skills, and student learning. Hasselquist et al. (2017) shared that it is important that teachers of Agriculture have a sense of community with their colleagues, and that the subject is a part of the larger school agenda. Findings from this study highlighted that participants thought that some of their colleagues do not understand the time and effort that goes into being a teacher of a subject with a practical component. Findings from Traini et al. (2021) indicated that early-career teachers often felt pressure from their SLT, and referenced this from a perspective of fear or self-consciousness. This was due to the SLT having expectations that conflict with other stakeholders, such as the community. This can detrimentally influence their self-efficacy through a negative self-perception in the role.

Given the formal hierarchy structure of leadership seen in schools, secondary school principals are more likely to focus on indirect instructional leadership, and distribute the direct instructional leadership role to middle leaders (Bassett, 2016). An individual who is in a position of senior leadership has many roles that they encompass daily, from administrative and management tasks, to leading teaching and learning, and growing leaders from within (Fisher & Carlyon, 2015). Due to their many roles, no leadership style fits best, so they will need to employ characteristics from all to suit differing situations and achieve best outcomes. It is middle leaders in the formal hierarchy, for example the Heads of Faculty (HOFs), who tend to best understand the challenges facing classroom teachers. There is an expectation placed on middle leaders to lead learning, while having a significant teaching load (Irvine, 2016), and also channel communication between the SLT and the teaching staff (Bassett, 2016). Comments from the findings in Phase Two suggest that the SLT are too far removed from the ground level, do not truly understand what it is like to be in the classroom anymore and lack awareness around what AHS teachers do. The extra responsibilities placed on teachers were specifically linked to burnout in research by Elliott et al. (2017), with Croom (2003) suggesting that those who experience a decrease in personal accomplishment caused in part by the SLT or the culture of the school are more susceptible to burnout.

Inclusive educational leadership will encourage personal growth, and PD as it is built on values such as respect, trust, collegiality, and open communication. It is a transformational leader who would actively encourage those around them to take up the opportunity to participate and seek specialised PD that will help support them in their practice (Tims et al., 2011). A transformational leader will recognise the importance of the support and that it will have a direct result on the teacher's self-efficacy. As the leader they will ensure that they support and encourage both professional and personal growth, which will increase overall morale and job satisfaction (Bass & Riggio, 2006). Evidence also suggests that demonstrating trust and confidence in a teacher's capabilities, and showing that teachers are appreciated and valued, are important factors in the development of self-efficacy (Geiger & Pivovarova, 2018; Kelchtermans, 2017; Räsänen et al., 2020; Whipp & Salin, 2018). Participants from Phase Two of this study shared that the SLT need to support and respect what the teacher is doing, from entry requirements into the subject, to providing resourcing for the subject, because ultimately this is for the benefit of students. The SLT, if undertaking a transformational approach to leadership, will understand the need to support their teachers to achieve their best (Humphreys, 2005). 42% of the participants from Phase One identified that a challenge for them is the lack of understanding from the SLT around taking trips, or time out of school as part of the subject. Participants from Phase Two echoed this but acknowledged that, due to the constraints of the timetable, only using their allocated class time was not an option.

Participants in this study also highlighted that the SLT can often lose sight of what expectations and responsibilities are being placed onto teachers, therefore having a large impact on their working conditions and work life balance. It is the autocratic leadership style which is on the opposite end of the spectrum to democratic where these leaders dictate through top-down communication what needs to be done, and how it is to be accomplished. It is due to their focus that these leaders can develop tunnel vision (Chukwusa, 2018). Consequently, members of the SLT need to be proactive in their approach to ensuring both a positive school culture but also having realistic expectations of their teachers. Transformational leadership leads to a higher morale amongst those who follow which directly influences the culture (Bass & Riggio, 2006). It is through open and transparent communication that trust within the relationship will be nurtured, which is of benefit to the teacher feeling valued. Transformational leaders will inspire others to achieve their best, and often this is seen through the communication of high expectations, and through modelling (Humphreys, 2005). By a leader demonstrating confidence in a teacher's ability and listening to their perception, leads to an increase in self-efficacy (Geiger & Pivovarova, 2018). The SLT fostering positive working conditions will lead to an increase in job satisfaction and therefore an increase in retention. If the work life

balance were to be addressed, it is the culture within the school that would need to change. To do this, the SLT would need to lead their teachers by example about the expectations of working hours that they place on them, and then collaboratively work to change the culture of it being acceptable to expect teachers to work long hours (Allen & Sims, 2018). A transformational leader will encourage and promote positive working conditions (Ladd, 2011), through social modelling of their own behaviour and expectations (Pounder, 2006). This will improve the school culture which will lead to greater job satisfaction (Gardiner, 2006).

Transformational leaders inspire through increasing team member self-efficacy in which members believe that they can go beyond their capabilities and expectations. This is because transformational leaders are far more likely to engage with teachers in a collegial manner (Ladd, 2011). There is evidence that also suggests the incorporation of shared instructional leadership is advantageous as it promotes a sense of community (Urick, 2016). A relationship built on trust between the SLT and teacher is critical for the teacher to exercise autonomy and lead a subject area effectively. Perryman and Calvert (2019) found that many participants could cope with the workload, but it was the lack of support, autonomy, and accountability from the SLT that were the main reasons for participants considering leaving. This highlights the large influence that the SLT has on their teachers. Pounder (2006) showed that the positive effects of transformational leadership in the classroom are consistent with the findings on transformational leadership, and thus will have a positive influence on students' effort, satisfaction, and performance. Social modelling of transformational leadership attributes by the SLT will also encourage their teachers to practise transformational leadership in the classroom. This will empower and motivate their students towards the achievement of excellent outcomes, which would not happen with a more transactional approach.

Transformational school leadership has an emphasis on networking. It promotes collegiality, which has the potential to promote learning and strengthens support amongst team members and other school colleagues (Thomas et al., 2018). Collegial support was indicated from the Phase One findings of this study to be a challenge to their role as an AHS teacher. Upon delving deeper into this insight in Phase Two, participants identified that often it is a lack of awareness around the subject, and that teachers are often only interested in the subject that they teach. Ansley et al. (2019) echoed that collegial support mattered and found that there was a significant correlation between satisfaction with workplace relationships and participants' overall job satisfaction.

School leaders are change makers and facilitators whose job it is to improve the school culture and its effectiveness by transforming the professional learning community. With transformational leaders, trust is higher between the leader and team members, even though the hierarchy remains, and most decisions will ultimately be made by the leader or the leadership team. Having clear communication that is shared more openly, allows for more meaningful participation, and team members' voices are heard through collaborative discussions (Gardiner, 2006). Communication is key, which came as no surprise through the findings of this study. Participants spoke of the need for the SLT to be transparent with their communication and listen to what their teachers are communicating to them. If an individual does not feel heard, this can lead to feeling less valued, particularly when AHS is, from the outset, on the margins of a school's curriculum hierarchy. Leaders need to be approachable, collaborative, and open to suggestions, "they must be learners themselves" (Geijsel et al., 2009, p. 155). Decisions that are transparent are seen as essential for staff members knowing the reasoning behind the decision, but also for acceptance (Geijsel et al., 2009). An example given by Alex was around the assumptions made by the SLT and how teachers should be spending their time. Engagement and consultation with teachers allows the SLT rationale behind decisions to be understood. It allows for questions to be asked and ensures that teachers feel that their opinions and insights are valued (Sims, 2020).

5.8 Conclusion

It is evident that what motivates and sustains the professional work of AHS curriculum leaders in New Zealand is the students they teach. It is the nature of the humanly intensive subject through relational learning that brings them joy. This rewarding profession unfortunately faces supply issues, with there not being enough qualified AHS teachers to fill positions around New Zealand. Many who are currently teaching the subject do not have a relevant tertiary background and have been required to upskill in the curriculum area, with those AHS teachers who have a relevant tertiary background possessing a skill set that makes them very desirable to industry.

Despite the challenges and constraints that they face, AHS teachers continue to have a positive mindset. Whilst workload was identified as a challenge, participants accepted this as part of their role. AHS teachers give a lot of service to the subject, through co- and extra-curricular work, and also hold other roles. They model leading through learning and display both transformational and relational leadership attributes. They highlight that following the traditional leadership hierarchy found in secondary schools in New Zealand is not the only way to demonstrate leadership. Leadership roles that are directly of benefit

to the subject of AHS means that as curriculum leaders they can continue to inspire, engage, and motivate their students in a subject they are passionate about.

Support through the HATA, PD, mentoring and the SLT are all contributing factors and influences on the retainment of teachers within the profession. Ensuring that teachers are supported throughout their journey, regardless of their career stage is crucial for job motivation, engagement, and satisfaction. PD is essential for the continual learning of the teacher, and a positive relationship with the SLT can directly influence this engagement and motivation. PD that allows collaboration in a supportive environment, where professional networks are created and nurtured reinforces a teacher's professional identity. It is the SLT and the culture within their school that can have a significant influence on the teacher as inclusive educational leadership will encourage personal growth through values such as trust and respect. A transformational leader will inspire and motivate, thereby promoting teacher self-efficacy.

Chapter 6
Implications and Conclusions

6.1 Summary of Main Findings

The findings from this research have achieved the goal of exploring what factors motivate and sustain the professional work of Agricultural and Horticultural Science (AHS) curriculum leaders in New Zealand secondary schools. It is the students that they teach, closely followed by their love of the subject. Agricultural and Horticultural Science curriculum leaders are enthusiastic and passionate about inspiring the younger generation through showing them the endless possibilities and opportunities available within the primary industries. Whilst no career comes without challenges and constraints, these are often viewed through a positive lens. Even though workload was identified as a challenge faced by teachers, the increased workload for AHS teachers is associated with their role and includes tasks that they enjoy and that benefit students and their engagement. It is the support networks around these teachers that are so influential to a teacher's job satisfaction and continuation in the profession. The leadership style of the senior leadership team (SLT) can have a significant influence on the culture of a school, including the perception of the subject, teacher self-efficacy, and teachers feeling valued. Members of the SLT who display more transformational and relational leadership characteristics will be able to have more of a positive influence. The actions of the SLT are thus crucial in retaining experienced and quality teachers at the school.

6.2 Limitations and Constraints

Any small-scale study has limitations. In this study, it was difficult to determine how many of the 353 email addresses in the Horticulture and Agriculture Teachers' Association of New Zealand (HATA) email list are associated with teachers currently teaching AHS. A response rate of 9% (31 respondents) might have been higher had the email invitation been sent only to those currently teaching. Unfortunately, not all AHS teachers in New Zealand are members of HATA and may not have seen the post on the HATA Facebook page, which could have also impacted the Phase One response rate.

Using an online questionnaire for Phase One could have had an influence on the responses received due to the reach of the survey. Mahmutovic (2021) suggests that older generations, for example, baby boomers (1946 -1964) are less likely to participate in online surveys but are more likely to participate if these are sent via email. Kelfve et

al. (2020) shared that responses rates from web surveys compared to other survey modes were consistently lower. The exception is younger age groups, for example millennials, where web survey is likely to generate similar responses rates to other survey modes. This is a potential limitation as the average age of AHS teachers is 55 years, whereas the average age of respondents was 47 years. All teachers have a school-based email; however, online questionnaires have been reported to be biased towards those who have access to the internet, a compatible device, and are technology literate.

There is evidence that females also tend to complete online questionnaires more than their male counterparts which could have created a bias (Smith, 2008). This particularly needs to be considered given that the gender split of AHS teachers in New Zealand is 53% female to 47% male, and the gender split from the respondents was 67.7% female and 32.3% male.

The inclusion of semi-structured interviews for Phase Two has many strengths, but it is important to acknowledge limitations to the method. Due to time constraints and interviews being time-consuming and labour intensive (Mertler, 2017), only five participants were interviewed. As a result, the five narratives and opinions may not be a true representation of the AHS teaching cohort in New Zealand. Due to the small number of interviewees, it was important not to dismiss outright what could be a real effect or make undue claims (Anderson, 2010). As the AHS teaching cohort in New Zealand is small, the presence of the researcher can affect the participants response (Anderson, 2010). As a researcher being mindful of personal body language and expressions is essential so that they would not contribute to the participants response (Denzin, 1989).

However, it is important to reiterate that this does not change the rigor or trustworthiness of the work conducted in this study. It just means that it cannot be generalised across large populations.

6.3 Implications

The findings from this research indicate that curriculum leaders of AHS in New Zealand are motivated and sustained by the students that they teach, their love of the subject content, and through inspiring their students and being a part of their successes. Four key implications emerged from the results of this small-scale research. Firstly, strategies need to be explored that would reduce the workload incurred in this curriculum area. Secondly, schools must place value on including AHS as a subject that is available for

students to take and be wary of the impact that negative perceptions can have on the teacher and students. Thirdly, mentoring and professional development support is essential for the success of the AHS teacher. Lastly, the SLT have a large influence on the working conditions and culture in the school, and therefore the job satisfaction and retention of experienced, quality specialist teachers.

6.3.1 Workload

There is a need to recruit and retain passionate and effective AHS curriculum leaders. From the findings, it was evident that workload was a challenge and that a reduction would be of benefit to AHS teachers in New Zealand. It needs to be acknowledged that workload for all secondary teachers is an issue, and not a new one (Ministry of Education & Post-Primary Teachers' Association, 2016). However, AHS teachers have extra work demands placed on top of the classroom workload that include resource management and keeping up to date with constantly evolving content (Delnero & Weeks, 2000; Torres, 2008). Thus, curriculum leaders of this subject require ongoing professional development (PD) to ensure that they are providing their students with the most up to date information in their course. Teachers are often expected to do this in their own time, so the opportunity exists for the SLT to acknowledge the extra time commitment by allocating PD time during the school day. It is important that the SLT create the conditions where this is valued, which will increase job satisfaction. Strategies such as an allowance for the school to employ a resource technician, similar to that of a science technician, or a reduction in contact time for the classroom teacher, could be implemented by the SLT; however, this requires support from the Ministry of Education (MOE). Implementation could be placed across all hard to staff specialist subjects, as the strategies are transferable to ensure recruitment and retention of teachers in specialist subject areas.

6.3.2 The Importance of Perception and Valuing the Subject

The SLT must understand and realise that AHS provides a career pathway, and that the primary industries are of significant importance to the New Zealand economy. It is the food and fibre sector that continues to lead New Zealand’s economic recovery from COVID-19 (Smith, 2022). The SLT, along with the MOE, must acknowledge the AHS teacher and the crucial role that they play in this space. Perception is important, with an implication being that in some schools it can be perceived as a space for less academic students. The SLT, middle management and deans need to be conscious of the discourses present among teachers, and the community. Negative perceptions can lead to de-valuing of the student within that space, as well as the teacher of the subject.

Acknowledgment that extra time is required for the subject, and SLT valuing of this time commitment is one way of addressing this.

Schools must place value on including AHS as a subject of choice for students. Students today are far more aware and educated about environmental and sustainability issues than previous generations. With students having the option to take the subject at school, regardless of whether they follow a career in the primary industries, increased knowledge about how food and fibre is produced here in New Zealand will enable them to make informed choices as a consumer. If they are to adequately prepare their students for the future, the SLT needs to carefully consider placement and promotion of this subject within the school timetable.

6.3.3 Mentoring Avenues

Mentoring support of AHS teachers is crucial for their success. This support becomes of even more importance when a beginning teacher is the only teacher of the subject in the school. The implication is that whilst the HATA is doing the best they can in curriculum mentoring, they are heavily reliant on teachers who already have a significant workload. Those teachers are giving service for the good of the subject. The MOE have an obligation to address this and should look to employ a subject mentor who is an experienced classroom teacher to support teachers. This could be implemented across all subjects that have a higher proportion of single ‘siloed’ teachers of subjects in schools within New Zealand. This is because those teachers do not have the benefit of belonging to a department in which they can more easily get the curriculum support, guidance, and leadership they need. In August 2022, government funding for a nationwide advisory team, based out of St. Paul’s Collegiate School, was announced. This advisory team will provide support to AHS teachers, with acknowledgement that a support network is of immense importance for those single-department teachers (O'Connor, 2022).

Taking a step back into the Initial Teacher Education space, the implication is that mentoring of AHS preservice teachers could begin in tertiary institutions. In fact, this could occur for any subject specialisation. This would allow, at the preservice level, curriculum specific mentoring with a registered subject teacher who can help unpack standards, give suggestions for content for unit plans, and be able to start the formation of collegial networks. With the curriculum mentor being a current classroom teacher, this would allow for the preservice teacher to be exposed to the most up-to-date information, therefore understanding what is expected in the AHS classroom. Such a curriculum mentor could also help guide, suggest, or share personal experiences of challenges they

have faced, and strategies to help overcome them. As tertiary institutions are leading the initial education of future generation teachers, they must look at how they are best preparing these teachers for the profession.

6.3.4 The Influential Senior Leadership Team

From the findings and literature, working conditions and culture in the school have a considerable influence on job satisfaction. This is important because if job satisfaction decreases, then there is an increased likelihood that teachers will leave either the school or the profession. Teachers have communicated that they need the SLT to have confidence in them, giving them autonomy in the subject. Therefore, the implication for the SLT is to embrace transformational and relational leadership characteristics and develop high trust relationships with their teachers, allowing those teachers the agency and freedom to lead the curriculum in ways that best suits the subject they teach.

Clear, open, and transparent communication around decisions made, including the rationale for these, are important in ensuring that teachers feel valued and heard. Expectations and workload within the teaching profession have increased, so members of the SLT need to reduce the micromanagement of their teachers, and realise that when delegating responsibilities, there will be an increase in workload. Thus, there are greater implications for those who display instructional or transactional leadership styles, and reflection needs to occur regarding how to incorporate more transformational, relational or servant leadership characteristics. Instructional leadership does at times, given the situation, have benefits; however, to encourage teacher agency, motivation and for teachers to feel valued, the SLT must trust their teachers.

What the SLT can do for AHS teachers would be of benefit to all teachers regardless of their curriculum speciality. Thus, if the SLT can create a positive culture and working environment in the school, and are supportive of their teachers, this will have a positive influence on the job satisfaction and retention of experienced, quality teachers and curriculum leaders.

6.4 Future Research

This research looked at what sustains AHS curriculum leaders in New Zealand and included understanding of the challenges or constraints that they face. The findings suggest that further research is needed to delve deeper into how the varying support networks influence the teacher staying in the profession, along with looking at these

networks and how they evolve in their needs as a teacher progresses through their career stages. Secondly, future research examining the influence of the SLT and the culture of the school could allow for a better understanding of the impact that they have, particularly looking at strategies for leaders or those in the SLT to encourage autonomy, collaboration, open communication, and trust. Finally, this study has identified an area for future research exploring the professional identity of AHS teachers through their service contributions to the subject.

6.5 Conclusion

New Zealand requires experienced teachers, who are curriculum leaders, to continue to inspire and motivate the next generation. With the subject of Agriculture and Horticulture being of national significance now more than ever, understanding what sustains these teachers in the profession is crucial. By understanding the factors that motivate and sustain the professional work of AHS curriculum leaders, processes and strategies can be put into place to ensure their longevity in the profession and positively impact students' effort, motivation, satisfaction, and success.

References

Abed, M. G. (2015). A consideration to two main ethical issues in educational research, and how may these be addressed. *i-Manager's Journal on Educational Psychology*, *8*(3), 1-14. https://doi.org/10.26634/jpsy.8.3.3099

Adams, W. (2015). Conducting semi-structured interviews. In J. Wholey, H.Hatry, & K. Newcomer (Eds.), *Handbook of practical program evaluation* (4 ed.). Jossey-Bass. https://doi.org/10.1002/9781119171386.ch19

Adams, W. K., Plisch, M., & Plantt, T. (2019). Have a passion for teaching? Consider high school teaching. *American Journal of Physics*, *87*(5), 328-329. https://doi.org/10.1119/1.5094433

Agee, J. (2009). Developing qualitative research questions: A reflective process. *International Journal of Qualitative Studies in Education*, *22*(4), 431-447. https://doi.org/10.1080/09518390902736512

Ahlin, E. (2019). Semi-structured interviews with expert practitioners: Their validity and significant contribution to translational research. In *SAGE Research Methods Cases Part 2*. SAGE. https://doi.org/10.4135/9781526466037

Al Barwani, T., Assunção Flores, M., & Imig, D. (2018). *Leading change in teacher education: Lessons from countries and education leaders around the globe*. Routledge.

Allen, K. (2022a). *Analysis of statistics for Agricultural and Horticultural Science 2021.* Author.

Allen, K. (2022b). Inquiry into the future of the workforce needs in the primary industries of NZ and petition of Shengjun Jin. In *Primary Production Committee Meeting - 19.05.2022*: NZ Parliament.

Allen, R. S., & Sims, S. (2018). *The teacher gap*. Routledge.

Anderson, C. (2010). Presenting and evaluating qualitative research. *American Journal of Pharmaceutical Education*, *78*(8), 141. https://doi.org/10.5688/aj7408141

Andrade, C. (2020). The limitations of online surveys. *Indian Journal of Psychological Medicine*, *42*(6), 575-576. https://doi.org/10.1177/0253717620957496

Ansley, B. M., Houchins, D., & Varjas, K. (2019). Cultivating positive work contexts that promote teacher job satisfaction and retention in high-need schools. *Journal of Special Education Leadership*, *32*(1), 3-16. https://eric.ed.gov/?id=EJ1274904

Anthony, G., & Ord, K. (2008). Change-of-career secondary teachers: Motivations, expectations and intentions. *Asia-Pacific Journal of Teacher Education*, *36*(4), 359-376. https://doi.org/10.1080/13598660802395865

Armstrong, A. J., Holmes, C. M., & Henning, D. (2020). A changing world, again. How appreciative inquiry can guide our growth. *Social Sciences & Humanities Open*, *2*(1), 1-4. https://doi.org/10.1016/j.ssaho.2020.100038

Bandura, A. (1997). *Self-efficacy: The exercise of control.* Worth Publishers.

Bass, B. M. (1999). Two decades of research and development in transformational leadership. *European Journal of Work and Organizational Psychology*, *8*(1), 9-32. https://doi.org/10.1080/135943299398410

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Psychology Press. https://doi.org/10.4324/9781410617095

Bassett, M. (2016). The role of middle leaders in New Zealand secondary schools: Expectations and challenges. *Waikato Journal of Education*, *21*(1), 97-108. https://doi.org/10.15663/wje.v21i1.194

Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative research: QR*, *15*(2), 219-234. https://doi.org/10.1177/1468794112468475

Blackburn, J. J., Bunch, J. C., & Haynes, J. C. (2017). Assessing the relationship of teacher self-efficacy, job satisfaction, and perception of work-life balance of Louisiana agriculture teachers. *Journal of Agricultural Education*, *58*(1), 14-35. https://eric.ed.gov/?id=EJ1138978

Blanche, M. T., Blanche, M. J. T., Durrheim, K., & Painter, D. (2006). *Research in practice: Applied methods for the social sciences* (2nd ed.). UCT Press. https://books.google.co.nz/books?id=7eKA1SMlOzAC

Bleazby, J. (2015). Why some school subjects have a higher status than others: The epistemology of the traditional curriculum hierarchy. *Oxford Review of Education*, *41*(5), 671-689. https://doi.org/10.1080/03054985.2015.1090966

Booth, J., Coldwell, M., Müller, L.-M., Perry, E., & Zuccollo, J. (2021). Mid-career teachers: A mixed methods scoping study of professional development, career progression and retention. *Education Sciences*, *11*(6), 1-33. https://doi.org/10.3390/educsci11060299

Bowling, A., & Ball, A. (2020). More than winning: A mixed methods grounded theory investigation of the career development event preparation process. *Journal of Agricultural Education*, *61*(4), 1-14. https://doi.org/10.5032/jae.2020.04001

Bowling, A., Rice, A. H., Curry, K., & Marx, A. (2022). The essence of agricultural education teachers motivational beliefs across career stages. *Teaching and Teacher Education*, *114*, 1-12. https://doi.org/10.1016/j.tate.2022.103691

Bradley, K. D., & Loadman, W. E. (2005). Urban secondary educators' views of teacher recruitment and retention. *NASSP Bulletin*, *89*(644), 2-28. https://doi.org/10.1177/019263650508964402

Brinck, L., & Maher, K. (n.d). *New teacher retention in New Zealand schools*. https://www.educationcounts.govt.nz/__data/assets/pdf_file/0003/196338/He-Whakaaro-New-teacher-retention-in-New-Zealand-....pdf

Brower, H. H., Schoorman, F. D., & Tan, H. H. (2000). A model of relational leadership: The integration of trust and leader–member exchange. *The Leadership Quarterly*, *11*(2), 227-250. https://doi.org/10.1016/S1048-9843(00)00040-0

Brunetti, G. J. (2001). Why do they teach? A study of job satisfaction among long-term high school teachers. *Teacher Education Quarterly 28*(3), 49-74. https://www.proquest.com/scholarly-journals/why-do-they-teach-study-job-satisfaction-among/docview/222877830/se-2

Buchanan, J. (2010). May I be excused? Why teachers leave the profession. *Asia Pacific Journal of Education*, *30*(2), 199-211. https://doi.org/10.1080/02188791003721952

Buchanan, J., Prescott, A., Schuck, S., Aubusson, P., & Burke, P. (2013). Teacher retention and attrition: Views of early career teachers. *Australian Journal of Teacher Education*, *38*(3), 124-141. https://doi.org/10.14221/ajte.2013v38n3.9

Buchanan, P. (2014). *Appreciative inquiry: A path to change in education* [Doctoral dissertation, California State University]. https://scholarworks.lib.csusb.edu/etd/125

Canavesi A, & Minelli E. (2021). Servant leadership: A systematic literature review and network analysis. *Employee Responsibilities and Rights Journal*, *34*(3), 267-289. https://doi.org/10.1007/s10672-021-09381-3

Cano, J. M., G. (1992). A gender analysis of job satisfaction, job satisfier factors, and job dissatisfier factors of agricultural education teachers. *Journal of Southern Agricultural Education Research*, *33*(3), 40-46. https://doi.org/10.5032/JAE.1992.02040

Chiong, C., Menzies, L., & Parameshwaran, M. (2017). Why do long ‐ serving teachers stay in the teaching profession? Analysing the motivations of teachers with 10 or more years' experience in England. *British Educational Research Journal*, *43*(6), 1083-1110. https://doi.org/10.1002/berj.3302

Chukwusa, J. (2018). Autocratic leadership style: Obstacle to success in academic libraries. *Library Philosophy and Practice*. https://digitalcommons.unl.edu/libphilprac/2019/

Chyung, S. Y., Barkin, J. R., & Shamsy, J. A. (2018). Evidence ‐ based survey design: The use of negatively worded items in surveys. *Performance Improvement (International Society for Performance Improvement)*, *57*(3), 16-25. https://doi.org/10.1002/pfi.21749

Chyung, S. Y., Roberts, K., Swanson, I., & Hankinson, A. (2017). Evidence ‐ based survey design: The use of a midpoint on the likert scale. *Performance Improvement (International Society for Performance Improvement)*, *56*(10), 15-23. https://doi.org/10.1002/pfi.21727

Chyung, S. Y., Swanson, I., Roberts, K., & Hankinson, A. (2018). Evidence ‐ based survey design: The use of continuous rating scales in surveys. *Performance Improvement (International Society for Performance Improvement)*, *57*(5), 38-48. https://doi.org/10.1002/pfi.21763

Clark, M. S., Kelsey, K. D., & Brown, N. R. (2014). The thornless rose: A phenomenological look at decisions career teachers make to remain in the profession. *Journal of Agricultural Education*, *55*(3), 43-56. https://eric.ed.gov/?id=EJ1122358

Clemons, C. A., Hall, M., & Lindner, J. (2021). What is the real cost of professional success? A qualitative analysis of work and life balance in agriscience education. *Journal of Agricultural Education*, *62*(1), 95-113. https://doi.org/10.5032/jae.2021.01095

Clouder, D., & King, V. (2015). What works? A critique of appreciative inquiry as a research methodology. *Theory and Method in Higher Education Research*, 169-190. https://doi.org/10.1108/S2056-375220150000001008

Cloughley, N. (2020). *'Soil is not dirt' - Effective agriculture teachers in New Zealand: Pedagogies and challenges* [Unpublished masters thesis, Massey University].

Coghlan, D., & Brydon-Miller, M. (2014). *The SAGE encyclopedia of action research*. SAGE https://doi.org/10.4135/9781446294406

Cohen, L., Manion, L., & Morrison, K. (2007). Questionnaires. In *Research methods in education* (6th ed., pp. 317 - 348). Taylor & Francis Group. https://gtu.ge/Agro-Lib/RESEARCH%20METHOD%20COHEN%20ok.pdf

Cohen, L., Manion, L., & Morrison, K. (2011). Surveys, longitudinal, cross-sectional and trend studies. In *Research methods in education* (7th ed., pp. 256-288). Routledge.

Cohen, L., Manion, L., & Morrison, K. (2017). Validity and reliability. In *Research methods in education* (8th ed., pp. 245 - 284). Taylor & Francis Group.

Cooperrider, D., & Srivastva, S. (1987). Appreciative inquiry in organizational life. *Research in Organization Change and Development*, *1*, 129-169. https://www.researchgate.net/publication/265225217_Appreciative_Inquiry_in_Organizational_Life

Cooperrider, D., & Whitney, D. (2005). A positive revolution in change: Appreciative inquiry (draft). *The Change Handbook: The Definitive Resource on Today's Best Methods for Engaging Whole Systems*, *87*, 1-30. https://www.researchgate.net/publication/237404587

Cooperrider, D. L., Whitney, D., & Stavros, J. M. (2003). *Appreciative inquiry handbook - The first in a series of AI workbooks for leaders of change*. Lakeshore Communications.

Cooperrider, D. L., Whitney, D., & Stavros, J. M. . (2008). *Appreciative inquiry handbook: For leaders of change* (2nd ed.). Crown Custom Publishing & BrettKoehler Publishing.

Couillault, V. (2022). *Vaughan Couillault (Secondary Principals' Association): We have to be competitive with the likes of Canada, Australia*. [Interview]. The Mike Hosking Breakfast. https://www.iheart.com/podcast/211-the-mike-hosking-breakfast-24837692/episode/vaughan-couillault-secondary-principals-assn-says-102059779/

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. SAGE.

Crippen, C., & Willows, J. (2019). Connecting teacher leadership and servant leadership: A synergistic partnership. *Journal of Leadership Education*, *18*(2), 171-180. https://doi.org/10.12806/V18/I2/T4

Croom, B. D. (2003). Teacher burnout in agricultural education. *Journal of Agricultural Education*, *44*(2), 1-13. https://doi.org/10.5032/jae.2003.02001

Crutchfield, N., Ritz, R., & Burris, S. (2013). Why agricultural educators remain in the classroom. *Journal of Agricultural Education*, *54*(2), 1-14. https://doi.org/10.5032/jae.2013.02001

Currie, G., & Lockett, A. (2007). A critique of transformational leadership: Moral, professional and contingent dimensions of leadership within public services organizations. *Human Relations*, *60*(2), 341-370. https://doi.org/10.1177/0018726707075884

Delnero, J. A., & Weeks, W. G. (2000). How secondary agricultural education teachers describe their work. *Journal of Southern Agricultural Education Research*, *50*, 7-14. http://pubs.aged.tamu.edu/jsaer/pdf/Vol50/50-00-007.pdf

Denzin, N. K. (1989). *The research act: A theoretical introduction to sociological methods* (3rd ed.). New Jersey.

Dhindsa, H. S., & Md-Hamdilah, A.-Z.-A. (2015). Societal perceptions of agriculture: A Brunei case study. *The Journal of Agricultural Education and Extension*, *21*(5), 441-465. https://doi.org/10.1080/1389224X.2014.971828

Disberger, B. (2020). From sowing to harvest: Growing mentoring relationships. *The Agricultural Education Magazine*, *93*(3), 10-11. https://www.ufcooperatingteacherssupport.com/uploads/1/2/3/6/123664655/from_sowing_to_harvest.pdf

Doney, P. A. (2013). Fostering resilience: A necessary skill for teacher retention. *Journal of Science Teacher Education*, *24*(4), 645-664. https://doi.org/10.1007/s10972-012-9324-x

Dweck, C. S. (2008). *Mindset: The new psychology of success*. Ballantine Books.

Easterly III, R. G. (2020). The perfect mentor doesn't exist: How to establish a constellation of mentors to become a star agriculture teacher. *The Agricultural Education Magazine*, *93*(3), 12-14.

Easterly III, R. G., & Simpson, K. (2020). An examination of the curricular resource use and self efficacy of Utah school-based agricultural education teachers: An exploratory study. *Journal of Agricultural Education*, *61*(4), 30-45. https://doi.org/10.5032/jae.2020.04035

Eck, C., Robinson, S., Ramsey, J., & Cole, K. (2019). Identifying the characteristics of an effective agricultural education teacher: A national study. *Journal of Agricultural Education*, *60*, 1-18. https://doi.org/10.5032/jae.2019.04001

Education Counts. (2021a). *School Subject Enrolment*. https://www.educationcounts.govt.nz/statistics/subject-enrolment

Education Counts. (2021b). *Teacher Numbers*. https://www.educationcounts.govt.nz/statistics/teacher-numbers

Eisenhart, M. (2006). Representing qualitative data. In J. L. Green, G. Camilli, P. B. Elmore, & A. American Educational Research (Eds.), *Handbook of complementary methods in education research* (pp. 567-581). Lawrence Erlbaum Associates. https://doi.org/10.4324/9780203874769

Elliott, K. S., Dainty, J. D., & Jones, J. (2017). A descriptive study of factors influencing the retention of secondary agriculture teachers. *Career and Technical Education Research*, *42*(1), 3-20. https://doi.org/10.5328/cter42.1.3

Ellison, D. W., Kern, B. D., & Killian, C. M. (2021). Why they remain: factors influencing teaching sustainability in high-poverty schools. *Physical Education and Sport Pedagogy*, 1-15. https://doi.org/10.1080/17408989.2021.1934661

FederiAova, M. (2021). Teacher turnover: What can we learn from Europe? *European Journal of Education*, *56*(1), 102-116. https://doi.org/10.1111/ejed.12429

Fisher, A., & Carlyon, T. (2015). School leaders growing leadership from within: A framework for the development of school leaders. *Waikato Journal of Education*, *20*(2), 93-102. https://doi.org/10.15663/wje.v20i2.179

Flannery, S. (2019). *An exploration of the professional development needs of agricultural teachers in their role as educators.* [Doctoral thesis, University College Dublin]. http://hdl.handle.net/10197/12178

Flavell, M. (2021). The promise of appreciative inquiry as a tool to developing home–school relationships for secondary Pacific students. *The Australian Educational Researcher*. https://doi.org/10.1007/s13384-021-00497-x

Floyd, K. (2020). *Factors to teacher retention in leave: Secondary agricultural education* [Doctoral thesis, Murray State University]. https://digitalcommons.murraystate.edu/etd/192

Gardiner, J. J. (2006). Transactional, transformational, and transcendent leadership: Metaphors mapping the evolution of the theory and practice of governance. *Leadership Review*, *6*(2), 62-76. https://doi.org/10.1108/ijem.1999.13.6.301.4

Gates, H. R., Shoulders, C. W., Johnson, D. M., Edgar, D., & Blythe, J. M. (2020). Preservice agricultural education and secondary education teachers' self-efficacy and professional identity. *Journal of Agricultural Education*, *61*(3), 112-127. https://doi.org/10.5032/jae.2020.03112

Geiger, T., & Pivovarova, M. (2018). The effects of working conditions on teacher retention. *Teachers and Teaching: Theory and Practice*, *24*(6), 604-625. https://doi.org/10.1080/13540602.2018.1457524

Geijsel, F. P., Sleegers, P. J., Stoel, R. D., & Kruger, M. L. (2009). The effect of teacher psychological and school organizational and leadership factors on teachers' professional learning in Dutch schools. *The Elementary School Journal*, *109*(4), 406-427. https://doi.org/10.1086/593940

Gerritsen, J. (2022). *Chance of secondary school teacher shortage in 2023, oversupply for primary schools*. https://www.rnz.co.nz/news/national/480840/chance-of-secondary-school-teacher-shortage-in-2023-oversupply-for-primary-schools

Gilman, D., Peake, J. B., & Parr, B. (2012). A gender analysis of job satisfaction levels of agricultural education teachers in Georgia. *Journal of Career and Technical Education*, *27*(2), 98-113. https://doi.org/10.21061/jcte.v27i2.715

Glen, S. (n.d.). *Cronbach's Alpha: Definition, Interpretation, SPSS*. Retrieved 26.07.22 from https://www.statisticshowto.com/probability-and-statistics/statistics-definitions/cronbachs-alpha-spss/

Gliem, J. A., & Gliem, R. R. (2003). *Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales.* Midwest Research to Practice Conference in Adult, Continuing, and Community Education, Columbus. https://scholarworks.iupui.edu/bitstream/handle/1805/344/gliem+&+gliem.pdf?sequence=1

Grieten, S., Lambrechts, F., Bouwen, R., Huybrechts, J., Fry, R., & Cooperrider, D. (2018). Inquiring Into Appreciative Inquiry: A Conversation With David

Cooperrider and Ronald Fry. *Journal of Management Inquiry*, *27*(1), 101-114. https://doi.org/10.1177/1056492616688087

Grinyer, A. (2009). The ethics of the secondary analysis and continuing usage of qualitative data. *Social research update* (56), 1-4. http://sru.soc.surrey.ac.uk/SRU56.pdf

Grissom, J. A., & Bartanen, B. (2019). Strategic retention: principal effectiveness and teacher turnover in multiple-measure teacher evaluation systems. *American Educational Research Journal*, *56*(2), 514-555. https://doi.org/10.3102/0002831218797931

Grossman, P. L., & Stodolsky, S. S. (1995). Content as context: The role of school subjects in secondary school teaching. *Educational Researcher*, *24*(8), 5-23. https://doi.org/10.3102/0013189X024008005

Gu, Q. (2014). The role of relational resilience in teachers' career-long commitment and effectiveness. *Teachers and Teaching: Theory and Practice*, *20*(5), 502-529. https://doi.org/10.1080/13540602.2014.937961

Guillemin, M., & Gillam, L. (2004). Ethics, reflexivity, and "ethically important moments" in research. *Qualitative Inquiry*, *10*(2), 261-280. https://doi.org/10.1177/1077800403262360

Hallinger, P. (2003). Leading educational change: Reflections on the practice of instructional and transformational leadership. *Cambridge Journal of Education*, *33*(3), 329-352. https://doi.org/10.1080/0305764032000122005

Harrell, P. E., Thompson, R., & Brooks, K. (2019). Leaving schools behind: The impact of school student body and working conditions on teacher retention and migration. *Journal of Science Teacher Education*, *30*(2), 144-158. https://doi.org/10.1080/1046560X.2018.1538300

Harris, B. (2021). *17 things resilient teachers do (and 4 things they hardly ever do)*. Routledge. https://doi.org/10.4324/9781003058649

Hasselquist, L., & Graves, N. A. (2020). CTE teacher retention: Lessons learned from mid-career teachers. *Career and Technical Education Research*, *45*(1), 3-16. https://doi.org/10.5328/cter45.1.3

Hasselquist, L., Herndon, K., & Kitchel, T. (2017). School culture's influence on beginning agriculture teachers' job satisfaction and teacher self-efficacy. *Journal of Agricultural Education*, *58*(1), 267-279. https://doi.org/10.5032/jae.2017.01267

He, H. (2021). Students' learned helplessness and teachers' care in EFL classrooms [Mini Review]. *Frontiers in Psychology*, *12*, 1-4. https://doi.org/10.3389/fpsyg.2021.806587

Heilman, A. (2021). *Alternative School Teacher Perceptions of Learned Helplessness* [Doctoral dissertation, Northcentral University]. https://www.proquest.com/openview/91a7b4566a0c2d27c715d323837c5bb3/1.pdf?pq-origsite=gscholar&cbl=18750&diss=y

Heineke, A. J., Mazza, B. S., & Tichnor-Wagner, A. (2014). After the two-year commitment: A quantitative and qualitative inquiry of teach for America teacher retention and attrition. *Urban Education*, *49*(7), 750-782. https://doi.org/10.1177/0042085913488603

Henning, J. E., Gut, D. M., & Beam, P. C. (2018). *Building mentoring capacity in teacher education: A guide to clinically-based practice* (1st ed.). Routledge. https://doi.org/10.4324/9781351260121

Hertz, R. (1996). Introduction: Ethics, reflexivity and voice. *Qualitative Sociology*, *19*, 3-9. https://doi.org/10.1007/BF02393245

Holtom, B., Baruch, Y., Aguinis, H., & A Ballinger, G. (2022). Survey response rates: Trends and a validity assessment framework. *Human Relations*, 1560–1584. https://doi.org/10.1177/00187267211070769

Hosking, D. M., & McNamee, S. (2007). Appreciating appreciative inquiry as not 'normal' science. *AI Practitioner*, 12-16.

Howes, L. M., & Goodman-Delahunty, J. (2015). Teachers' career decisions: Perspectives on choosing teaching careers, and on staying or leaving. *Issues in Educational Research*, *25*(1), 18-35. https://eric.ed.gov/?id=EJ1061121

Huamán-Romaní, Y.-L., Castillo-Patiño, L., Molina-Chircca, E., Castillo-Alarcón, A., Juro-García, R., & Quispe-Anchayhua, M. (2021). Is there servant leadership and job satisfaction in education teachers during the Covid-19 pandemic? *Turkish Journal of Computer and Mathematics Education*, *12*(14), 172-179.

Humphreys, J. H. (2005). Contextual implications for transformational and servant leadership. *Management Decision*, *43*(10), 1410-1431. https://doi.org/10.1108/00251740510634949

Irvine, P., & Brundrett, M. (2016). Middle leadership and its challenges: a case study in the secondary independent sector. *Management in Education*, *30*(2), 86-92. https://doi.org/10.1177/0892020616643158

Ismail, N., & Miller, G. (2021). Factors that motivate high school agriculture teachers to teach. *Journal of Agricultural Education*, *62*(1), 331-346. https://doi.org/10.5032/jae.2021.01297

Johns, D. P., & Dimmock, C. (1999). The marginalization of physical education: Impoverished curriculum policy and practice in Hong Kong. *Journal of Education Policy*, *14*(4), 363-384. https://doi.org/10.1080/026809399286242

Keenan, B. (2017). Phenomenological approach utilizing semi-structured interviews: Do early career researchers feel they are practicing in an environment that values research? In *SAGE Research Methods Cases Part 2*. SAGE https://doi.org/10.4135/9781526419026

Kelchtermans, G. (2017). 'Should I stay or should I go?': unpacking teacher attrition/retention as an educational issue. *Teachers and Teaching: Theory and Practice*, *23*(8), 961-977. https://doi.org/10.1080/13540602.2017.1379793

Kelfve, S., Kivi, M., Johansson, B., & Lindwall, M. (2020). Going web or staying paper? The use of web-surveys among older people. *BMC Medical Research Methodology*, *20*, 252. https://doi.org/10.1186/s12874-020-01138-0

Kitchel, T., Smith, A., Henry, A., Robinson, S., Lawver, R., Park, T., & Schell, A. (2012). Teacher job satisfaction and burnout viewed through social comparisons. *Journal of Agricultural Education*, *53*(1), 31-44. https://doi.org/10.5032/jae.2012.01031

Ladd, H. F. (2011). Teachers' perceptions of their working conditions: How predictive of planned and actual teacher movement? *Educational Evaluation and Policy Analysis*, *33*(2), 235-261. https://doi.org/10.3102/0162373711398128

Lagen, P. (2022). *Secondary teachers meet to decide collective agreement claims*. PPTA. https://www.ppta.org.nz/news-and-media/secondary-teachers-meet-to-decide-collective-agreement-claims/

Lambert, M., Henry, A., & Tummons, J. (2011). How do early career Agriculture teachers talk about their time? *Journal of Agricultural Education*, *52*(3), 50-63. https://doi.org/10.5032/jae.2011.03050

Lane, K., Teng, M. Y., Barnes, S. J., Moore, K., Smith, K., & Lee, M. . (2018). Using appreciative inquiry to understand the role of teaching practices in student well-being at a research-intensive university. *The Canadian Journal for the Scholarship of Teaching and Learning*, *9*(2). https://doi.org/10.5206/cjsotl-rcacea.2018.2.10

Lauterbach, A. A. (2018). Hermeneutic phenomenological interviewing: Going beyond semi-structured formats to help participants revisit experience. *Qualitative Report*, *23*(11), 2883-2898. https://doi.org/10.46743/2160-3715/2018.3464

Lee, Y. H. (2019). Emotional labor, teacher burnout, and turnover intention in high-school physical education teaching. *European Physical Education Review*, *25*(1), 236-253. https://doi.org/10.1177/1356336X17719559

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.

Lough, B. (2019). *A Classroom View of New Zealand's Primary Industry.* Kellogg Rural Leadership Programme - Course 39.

Mackey, A., & Gass, S. M. (2005). *Second language research: Methodology and design*. Lawrence Erlbaum Associates Publishers.

Magzan, M., Anđić, D., & Papak, P. (2019). Appreciative inquiry as a positive approach to school's leadership development and organizational change: Croatian case study. In *Predictive Models for School Leadership and Practices* (pp. 120-142). https://doi.org/10.4018/978-1-5225-5858-3.ch007

Mahat, M., & Imms, W. (2020). The space design and use survey: Establishing a reliable measure of educators' perceptions of the use of learning environments. *Australian Educational Researcher*, *48*(1), 145-164. https://doi.org/10.1007/s13384-020-00382-z

Mahmutovic, J. (2021). *How generational differences impact survey participation*. https://www.surveylegend.com/customer-insight/generational-differences-in-surveys/

Mäkelä, K., Hirvensalo, M., & Whipp, P. (2015). Determinants of PE teachers career intentions. *Journal of Teaching in Physical Education*, *34*(4), 680-699. https://doi.org/10.1123/jtpe.2014-0081

Marques, J., Dhiman, S., & Biberman, J. (2011). Appreciative inquiry. In J. Marques, S. Dhiman, & J. Biberman (Eds.), *Managing in the Twenty-first Century: Transforming Toward Mutual Growth* (pp. 119-175). Palgrave Macmillan. https://doi.org/10.1057/9780230116719_3

McConnell, J. R. (2017). A model for understanding teachers' intentions to remain in STEM education. *International Journal of STEM Education*, *4*(1), 1-21. https://doi.org/10.1186/s40594-017-0061-8

McIntosh, B., Morrish, D., & Wakefield, D. (2018). Secondary agriculture science teachers: Factors affecting who will stay and who will go. *NACTA Journal*, *62*(3), 249-253. https://www.jstor.org/stable/26769561

McKee, K. L. (2003). *A Study of Factors Related to Teacher Retention* [Masters thesis, University of North Texas].

McKim, A., Velez, J., & Clement, H. (2017). Exploring relationships between personal variables, programmatic variables, and self-efficacy in school-based agricultural education. *Journal of Agricultural Education*, *58*(2), 284-298. https://doi.org/10.5032/jae.2017.02284

McKim, A. J., Sorensen, T. J., & Burrows, M. (2021). The COVID‐19 pandemic and agricultural education: An exploration of challenges faced by teachers. *Natural Sciences Education*, *50*(1), e20060. https://doi.org/10.1002/nse2.20060

Mertler, C. A. (2017). *Action research: Improving schools and empowering educators* (5th ed.). SAGE

Ministry of Education. (2020). *Teacher Demand and Supply Planning Tool – 2020 results*. https://www.educationcounts.govt.nz/publications/schooling2/workforce/a-summary-of-the-teacher-demand-and-supply-planning-tool/teacher-demand-and-supply-planning-tool-2020-results

Ministry of Education. (2022). *Schooling Kaiako/Teacher Entry and Leaving Rates*. https://www.educationcounts.govt.nz/statistics/teacher-movement

Ministry of Education, & Post-Primary Teachers' Association. (2016). *Secondary Teachers Supply Working Group Report*. https://www.ppta.org.nz/advice-and-issues/teacher-supply/document/174

Mockler, N. (2005). Trans/forming teachers: new professional learning and transformative teacher professionalism. *Journal of In-Service Education*, *31*(4), 733-746. https://doi.org/10.1080/13674580500200293

Mockler, N. (2014). When 'research ethics' become 'everyday ethics': the intersection of inquiry and practice in practitioner research. *Educational Action Research*, *22*(2), 146-158. https://doi.org/10.1080/09650792.2013.856771

Moore, C. (2019). *What is Appreciative Inquiry? A Brief History & Real Life Examples*. https://positivepsychology.com/appreciative-inquiry/#history

Mourão, L. (2018). The role of leadership in the professional development of dubordinates. In G. Suleyman Davut (Ed.), *Leadership* (pp. 123–138). IntechOpen. https://doi.org/10.5772/intechopen.76056

Murray, K., Flowers, J., Croom, B., & Wilson, B. (2011). The agricultural teacher's struggle for balance between career and family. *Journal of Agricultural Education*, *52*(2), 107-117. https://doi.org/0.5032/jae.2011.02107

Neumann, C. (2009). *Appreciative Inquiry in New Zealand: Practitioner Perspectives* [Masters thesis, University of Canterbury]. https://ir.canterbury.ac.nz/handle/10092/2608

New Zealand Post Primary Teachers' Association. (2018). *Secondary School Staffing Survey Report 2018*. https://www.ppta.org.nz/assets/Uploads/2018-Secondary-Staffing-Survey-report.pdf

Newby, P. (2014). *Research methods for education* (2nd ed.). Routledge. https://doi.org/10.4324/9781315758763

Nguyen, T. D., Pham, L. D., Crouch, M., & Springer, M. G. (2020). The correlates of teacher turnover: An updated and expanded meta-analysis of the literature. *Educational Research Review*, *31*, 1-17. https://doi.org/10.1016/j.edurev.2020.100355

O'Connor, D. (2022). *Boost for agricultural and horticultural science in schools* [Press Release]. https://www.beehive.govt.nz/release/boost-agricultural-and-horticultural-science-schools

O'Connor, D., Nash, S., & Whaitiri, M. (2022). *Primary Sector Backed to Grow and Innovate* [Press Release]. https://www.beehive.govt.nz/release/primary-sector-backed-grow-and-innovate

Osborne, D. K. (n.d). *Appreciative inquiry tool 3: Appreciative inquiry as a teaching approach*. Purple Orange. https://inclusiveschoolcommunities.org.au/resources/toolkit/appreciative-inquiry-tool-3-appreciative-inquiry-teaching-approach

Ovenden-Hope, T., Blandford, S., Cain, T., & Maxwell, B. (2018). RETAIN early career teacher retention programme: evaluating the role of research informed continuing professional development for a high quality, sustainable 21st century teaching profession. *Journal of Education for Teaching*, *44*(5), 590-607. https://doi.org/10.1080/02607476.2018.1516349

Perryman, J., & Calvert, G. (2019). What motivates people to teach, and why do they leave? Accountability, performability and teacher retention. *British Journal of Educational Studies*, *68*(1), 3-23. https://doi.org/10.1080/00071005.2019.1589417

Ponnock, A. R., Torsney, B. M., & Lombardi, D. (2018). Motivational differences throughout teachers' preparation and career. *New Waves Educational Research & Development*, *21*(2), 26-45. https://eric.ed.gov/?id=EJ1211293

Pounder, J. S. (2006). Transformational classroom leadership: The fourth wave of teacher leadership? *Educational Management Administration & Leadership*, *34*(4), 533-545. https://doi.org/10.1177/1741143206068216

Qu, S., & Koay, H. L. (2022). Analysis on the study failure of students in China today. *International Journal of Education and Humanties*, *2*(1), 12-14. https://doi.org/10.54097/ijeh.v2i1.231

Quan-Haase, A., & Sloan, L. (2016). *The SAGE handbook of social media research methods*. SAGE. https://doi.org/10.4135/9781473983847

Räsänen, K., Pietarinen, J., Pyhältö, K., Soini, T., & Väisänen, P. (2020). Why leave the teaching profession? A longitudinal approach to the prevalence and persistence of teacher turnover intentions. *Social Psychology of Education*, *23*(4), 837-859. https://doi.org/10.1007/s11218-020-09567-x

Redpath, R. (2018). *Secondary school agricultural and horticultural science and the factors that impact programme design and student outcomes*. TeachNZ Sabbatical Report.

Redpath, R., & Allen, K. (2019). *Briefing paper of Horticultural and Agriculture Teachers' Association (HATA) perspective and experience of primary industries education.* Produced for the Primary Industries Skills Working Group.

Rhodes, C., Stokes, M., & Hampton, G. (2004). *A practical guide to mentoring, coaching and peer-networking: Teacher professional development in schools and colleges*. Routledge. https://doi.org/10.4324/9780203591949

Rice, A., & Kitchel, T. (2017). Teachers' beliefs about the purpose of agricultural education and its influence on their pedagogical content knowledge. *Journal of Agricultural Education*, *58*(2), 198-213. https://doi.org/10.5032/jae.2017.02198

Rice, J. E., LaVergne, D. D., & Gartin, S. A. (2011). Agricultural teacher perceptions of school components as motivational factors to continue teaching and demotivational factors to discontinue teaching. *Journal of Career and Technical Education*, *26*(2). https://doi.org/10.21061/jcte.v26i2.529

Rinke, C. R. (2011). Career trajectories of urban teachers: A continuum of perspectives, participation, and plans shaping retention in the educational system. *Urban Education*, *46*(4), 639-662. https://doi.org/10.1177/0042085911399790

Roberts, R. (2017). The black swans of agricultural education: A glimpse into the lived experiences that shape urban agricultural educators' meaning in work. *Journal of Agricultural Education*, *58*(3), 1-18. https://doi.org/10.5032/jae.2017.03001

Roberts, R., Wittie, B., Stair, K., Blackburn, J., & Smith, E. (2020). The dimensions of professional development needs for secondary agricultural education teachers across career stages: A multiple case study comparison. *Journal of Agricultural Education*, *61*(3), 128-143. https://doi.org/10.5032/jae.2020.03128

Roberts, T., Dooley, K., Harlin, J., & Murphrey, T. (2007). Competencies and traits of successful agricultural science teachers. *Journal of Career and Technical Education*, *22*(2). https://doi.org/10.21061/jcte.v22i2.429

Roberts, T. G., & Dyer, J. E. (2004). Characteristics of effective agriculture teachers. *Journal of Agricultural Education*, *45*(4), 82-95. https://doi.org/10.5032/jae.2004.04082

Rural News Group. (2014). *Primary industry education - Not there yet*. Rural News. https://www.ruralnewsgroup.co.nz/rural-news/rural-general-news/primary-industry-education-not-there-yet

Sass, D. A., Seal, A. K., & Martin, N. K. (2011). Predicting teacher retention using stress and support variables. *Journal of Educational Administration*, *49*(2), 200-215. https://doi.org/10.1108/09578231111116734

Schunk, D. H., & DiBenedetto, M. K. (2021). Self-efficacy and human motivation. In A. J. Elliot (Ed.), *Advances in Motivation Science* (pp. 153-179). Elsevier. https://doi.org/10.1016/bs.adms.2020.10.001

Schwanecke, G. (2022). *Increased interest from overseas teachers not enough to fill gaps ahead of 'busy' first term*.

https://www.stuff.co.nz/national/education/130473175/increased-interest-from-overseas-teachers-not-enough-to-fill-gaps-ahead-of-busy-first-term

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, *22*(2), 63-75. https://doi.org/10.3233/EFI-2004-22201

Shoulders, C. (2018). A description of the professional identities of Arkansas agriculture teachers. *Journal of Agricultural Education*, *59*(3), 278-290. https://doi.org/10.5032/jae.2018.03278

Shoulders, C., & Myers, B. (2011). Considering professional identity to enhance agriculture teacher development. *Journal of Agricultural Education*, *52*(4), 88-108. https://doi.org/10.5032/jae.2011.04098

Shoulders, C., & Toland, H. (2017). Millennial and non-millennial agriculture teachers' current and ideal emphasis on the three components of the agricultural education program. *Journal of Agricultural Education*, *58*(1), 85-101. https://doi.org/10.5032/jae.2017.01085

Shuayb, M., Sharp, C., Judkins, M., & Hetherington, M. (2009). *Using appreciative inquiry in educational research: Possibilities and limitations*. https://www.nfer.ac.uk/publications/aen01/aen01.pdf

Sims, S. (2020). Modelling the relationships between teacher working conditions, job satisfaction and workplace mobility. *British Educational Research Journal*, *46*(2), 301-320. https://doi.org/10.1002/berj.3578

Skaalvik, E. M., & Skaalvik, S. (2017). Still motivated to teach? A study of school context variables, stress and job satisfaction among teachers in senior high school. *Social Psychology of Education*, *20*(1), 15-37. https://doi.org/10.1007/s11218-016-9363-9

Smalley, S., & Smith, A. (2017). Professional development needs of mid-career agriculture teachers. *Journal of Agricultural Education*, *58*(4), 282-290. https://doi.org/10.5032/jae.2017.04283

Smith, R. (2022). *Agriculture and trade: Ray Smith - Food and fibre sector at forefront of NZ's economic Covid recovery*. NZ Herald. https://www.nzherald.co.nz/business/agriculture-and-trade-ray-smith-food-and-fibre-sector-at-forefront-of-nzs-economic-covid-recovery/WIMGP7Q376VGTDP4FHU27RWEHQ/

Smith, W. (2008). *Does gender influence online survey participation? A record‐linkage analysis of university faculty online survey response behavior.* [Online Submission, San José State University].

Solomonson, J., & Retallick, M. (2018). Over the edge: Factors nudging mid-career, school-based agriculture teachers out of the profession. *Journal of Agricultural Education*, *59*(4), 1-19. https://doi.org/10.5032/jae.2018.04001

Song, H., Gu, Q., & Zhang, Z. (2020). An exploratory study of teachers' subjective wellbeing: understanding the links between teachers' income satisfaction, altruism, self-efficacy and work satisfaction. *Teachers and Teaching: Theory and Practice*, *26*(1), 3-31. https://doi.org/10.1080/13540602.2020.1719059

Sorensen, T., Lambert, M., & McKim, A. (2014). Examining Oregon agriculture teachers' professional development needs by career phase. *Journal of Agricultural Education*, *55*(5), 140-154. https://doi.org/10.5032/jae.2014.05140

Sorensen, T., McKim, A., & Velez, J. (2016). Why agriculture teachers leave: A national examination of turnover intentions and work-family conflict. *Journal of Agricultural Education*, *57*(4), 186-201. https://doi.org/10.5032/jae.2016.04186

Sorensen, T., McKim, A., & Velez, J. (2017). A national study of work characteristics and work-family conflict among secondary agricultural educators. *Journal of Agricultural Education*, *58*(2), 214-231. https://doi.org/10.5032/jae.2017.02214

Spitzer, M. (2021). Open schools! Weighing the effects of viruses and lockdowns on children. *Trends in Neuroscience and Education*, *22*, 1-11. https://doi.org/10.1016/j.tine.2021.100151

Stavros, J., Cooperrider, D., & Kelley, L. (2003). Strategic inquiry with appreciative intent: Inspiration to SOAR! *AI Practitioner: International Journal of Appreciative Inquiry*, *5*, 10-17. https://www.researchgate.net/publication/285057032_Strategic_inquiry_with_appreciative_intent_Inspiration_to_SOAR

Stavros, J. M., Godwin, L. N., & Cooperrider, D. L. (2015). Appreciative Inquiry. In W. J. Rothwell, J. Stavros, & R. L. Sullivan (Eds.), *Practicing organization development* (pp. 96-116). https://doi.org/10.1002/9781119176626.ch6

Stewart, T. (2012). Classroom teacher leadership: service-learning for teacher sense of efficacy and servant leadership development. *School Leadership & Management*, *32*(3), 233-259. https://doi.org/10.1080/13632434.2012.688741

Suárez, M. I., & Wright, K. B. (2019). Investigating school climate and school leadership factors that impact secondary STEM teacher retention. *Journal for STEM Education Research*, *2*(1), 55-74. https://doi.org/10.1007/s41979-019-00012-z

Sullivan, A., Johnson, B., & Simons, M. (2019). *Attracting and keeping the best teachers: Issues and opportunities* (Vol. 16). Springer Singapore Pte. https://doi.org/10.1007/978-981-13-8621-3

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*(6), 1273-1296. https://doi.org/10.1007/s11165-016-9602-2

Thibodeau, J. (2011). *Appreciative accreditation: A mixed methods explanatory study of appreciative inquiry-based institutional effectiveness results in higher education* [Doctoral thesis, The University of Nebraska - Lincoln]. Digital Commons. https://digitalcommons.unl.edu/cehsedaddiss/53/

Thieman, E., Henry, A., & Kitchel, T. (2012). Resilient agricultural educators: Taking stress to the next level. *Journal of Agricultural Education*, *53*(1), 81-94. https://doi.org/10.5032/jae.2012.01081

Thobega, M., & Miller, G. (2003). Relationship of instructional supervision with agriculture teachers' job satisfaction and their intention to remain in the teaching profession. *Journal of Agricultural Education*, *44*(4), 57-66. https://doi.org/10.5032/jae.2003.04057

Thomas, L., Tuytens, M., Devos, G., Kelchtermans, G., & Vanderlinde, R. (2018). Transformational school leadership as a key factor for teachers' job attitudes during their first year in the profession. *Educational Management Administration & Leadership*, *48*(1), 106-132. https://doi.org/10.1177/1741143218781064

Tims, M., Bakker, A., & Xanthopoulou, D. (2011). Do transformational leaders enhance their followers' daily work engagement? *The Leadership Quarterly*, *22*(1), 121-131. https://doi.org/10.1016/j.leaqua.2010.12.011

Torres, R. M., Ulmer, J. D., & Aschenbrener, M. S. (2008). Workload distribution among agriculture teachers. *Journal of Agricultural Education*, *49*(2), 75-87. https://doi.org/10.5032/jae.2008.02075

Traini, H., Claflin, K., Stewart, J., & Velez, J. (2019). Success, balance, but never both: Exploring reified forms of success in school-based agricultural education. *Journal of Agricultural Education*, *60*(4), 240-254. https://doi.org/10.5032/jae.2019.04240

Traini, H. Q., Stewart, J., & Velez, J. J. (2021). Navigating the social landscape of school-based agricultural education: A hermeneutic phenomenology. *Journal of Agricultural Education*, *62*(1). https://doi.org/10.5032/jae.2021.01061

Tran, H., & Smith, D. A. (2020). Designing an employee experience approach to teacher retention in hard-to-staff schools. *NASSP Bulletin*, *104*(2), 85-109. https://doi.org/10.1177/0192636520927092

Traynor, J.-M. (2011). Using industry connections to enhance professional development for agriculture teachers. *The Agricultural Education Magazine*, *84*(2), 12. https://www.naae.org/profdevelopment/magazine/archive_issues/Volume84/2011_09-10.pdf

Tschannen-Moran, M., & Tschannen‐Moran, B. (2011). Taking a strengths-based focus improves school climate. *Journal of School Leadership*, *21*(3), 422 - 448. https://doi.org/10.1177/105268461102100305

Tummons, J., Kitchel, T., & Garton, B. (2016). Expectation congruency and psychosocial support in formal agriculture teacher mentoring relationships. *Journal of Agricultural Education*, *57*(4), 68-85. https://doi.org/10.5032/jae.2016.04068

UCLA. (n.d). *Advanced research computing: Statistical methods and data analytics*. https://stats.oarc.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/#:~:text=Cronbach's%20alpha%20is%20a%20measure,a%20measure%20of%20scale%20reliability.&text=As%20the%20average%20inter%2Ditem,the%20number%20of%20items%20constant

University of St Andrews. (n.d). *Online surveys or questionnaires*. https://www.st-andrews.ac.uk/research/integrity-ethics/humans/ethical-guidance/online-surveys-or-questionnaires/

Urick, A. (2016). The influence of typologies of school leaders on teacher retention: A multilevel latent class analysis. *Journal of Educational Administration*, *54*(4), 434-468. https://doi.org/10.1108/JEA-08-2014-0090

Van der Vyver, C. P., Kok, T., & Conley, L. (2020). The relationship between teachers' professional wellbeing and principals' leadership behaviour to improve teacher

retention. *Perspectives in Education*, *38*(2), 86-102. https://doi.org/10.18820/2519593X/pie.v38.i2.06

van der Want, A. C., Schellings, G. L. M., & Mommers, J. (2018). Experienced teachers dealing with issues in education: A career perspective. *Teachers and Teaching: Theory and Practice*, *24*(7), 802-824. https://doi.org/10.1080/13540602.2018.1481024

Wang, H.-H., Bhattacharya, D., & Nelson, B. J. (2020). Secondary agriculture teachers' knowledge, beliefs and, teaching practices of climate change. *The Journal of Agricultural Education and Extension*, *26*(1), 5-17. https://doi.org/10.1080/1389224X.2019.1699126

Waters, L., & White, M. (2015). Case study of a school wellbeing initiative: Using appreciative inquiry to support positive change. *International Journal of Wellbeing*, *5*(1), 19-32. https://doi.org/10.5502/ijw.v5i1.2

Weinburgh, M. (2020). Emerging, existing, and imagined identities: A case of mid-career and late-career secondary science teacher departure/dropout. *Journal of Science Teacher Education*, *31*(6), 654-674. https://doi.org/10.1080/1046560X.2020.1744833

Weldon, P. (2018). Early career teacher attrition in Australia: Evidence, definition, classification and measurement. *The Australian Journal of Education*, *62*(1), 61-78. https://doi.org/10.1177/0004944117752478

Whipp, P. R., & Salin, K. (2018). Physical education teachers in Australia: Why do they stay? *Social Psychology of Education*, *21*(4), 897-914. https://doi.org/10.1007/s11218-018-9443-0

Witton, B. (2022). *Schools hiring untrained teachers as Government battles to avoid education 'crisis'*. https://www.stuff.co.nz/national/politics/129877376/schools-hiring-untrained-teachers-as-government-battles-to-avoid-education-crisis

Wolf, C., Joye, D., Smith, T. W., & Fu, Y. (2016). *The SAGE Handbook of Survey Methodology*. https://doi.org/10.4135/9781473957893

Wronowski, M. L. (2018). Filling the void: A grounded theory approach to addressing teacher recruitment and retention in urban schools. *Education and Urban Society*, *50*(6), 548-574. https://doi.org/10.1177/0013124517713608

Xenikou, A. (2017). Transformational leadership, transactional contingent reward, and organizational identification: The mediating effect of perceived innovation and goal culture orientations. *Frontiers in Psychology*, *8*, 1754-1754. https://doi.org/10.3389/fpsyg.2017.01754

Appendices

Appendix A: Letter to President and Secretary of the HATA

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

To the HATA President and Secretary

I am currently completing my MEdLeadership thesis with the University of Waikato looking at *'What factors sustain Agricultural and Horticultural Science curriculum leaders within the profession in New Zealand?'*. To gain a large-scale data set, I am seeking permission for the attached document {see Appendix D} to be distributed via the HATA email database system, and also permission that I am able to place a post onto the HATA Facebook page with the same information.

These findings will enable me to identify the reasons and influences that sustain Agricultural and Horticultural curriculum leaders in New Zealand. Furthermore, through an appreciative inquiry lens it will allow insight and recommendations formed in relation to retaining competent and experienced Agricultural and Horticultural curriculum leaders, and how this knowledge could be applied to those currently in or entering the profession. Retainment of curriculum experts is not only beneficial to the students, but also to New Zealand, as the subject area is of national significance.

All responses to the online questionnaire will remain anonymous.

A summary of the findings from this project will be made available to all participants and can be shared via the HATA email database and Facebook page.

Please do not hesitate to contact me by email cl355@students.waikato.ac.nz or by phone on 0212375266, if you have any questions regarding this research. If you have any further concerns about the study, you may also contact my Supervisor, Director of the Centre for Educational Leadership Research, Dr Rachel McNae rachel.mcnae@waikato.ac.nz

Kind regards

Coadette Low

KO TE TANGATA • **FOR THE PEOPLE**

This research has been approved by the University of Waikato Division of Education Ethics Committee on 13/05/2022. Approval number: FEDU027/22

Appendix B: Non-selection for Phase Two

Dear Participant {insert name},

Thank you for expressing your interest that you would like to participate in Phase Two, the semi-structured interview. I thank you for your support of the research that I am conducting as my MEdLeadership thesis. This letter is to inform you that you *have not been selected* to participate in the online interviews of the Phase Two data collection. Unfortunately, due to time constraints I am only able to engage with five participants for this. However, if this changes and you are still willing to be a participant I will be in contact. Once again, I thank you for your expression of interest for Phase Two.

Please do not hesitate to contact me by email cl355@students.waikato.ac.nz or by phone on 0212375266 if you have any questions regarding this research. If you have any further concerns about the study, you may also contact my Supervisor, Director of the Centre for Educational Leadership Research, Dr Rachel McNae rachel.mcnae@waikato.ac.nz

Thank you once again for your time and support.

Kind regards,

Coadette Low

KO TE TANGATA • **FOR THE PEOPLE**

This research has been approved by the University of Waikato Division of Education Ethics Committee on 13/05/2022. Approval number: FEDU027/22

Appendix C: Phase One Questionnaire

Phase One - Questionnaire

Thank you for taking part in this online questionnaire. The focus of this questionnaire is to collect data about what sustains your motivation and engagement of being an Agricultural and Horticultural Science teacher in New Zealand, and the desire to remain in the profession.

These findings will enable me to identify the reasons and influences that sustain Agricultural and Horticultural curriculum leaders in New Zealand. Furthermore, through an appreciative inquiry lens it will allow insight and recommendations for retaining competent and experienced Agricultural and Horticultural curriculum leaders, and how this knowledge could be applied to those currently in or entering the profession. Retainment of curriculum experts is not only beneficial to the students, but also to New Zealand, as the subject area is of national significance.

This questionnaire will take no longer than 10 minutes, and your responses will remain anonymous. Upon pressing the 'submit' button you consent to the data that you have provided being used for the above research purpose. A summary of the findings from this project will be made available to all participants and will be shared via the HATA email database and Facebook page.

My research project consists of two parts; Phase One is an online questionnaire, and Phase Two is an online video interview. If you have taught Agricultural and Horticultural Science for more than five years and wish to be involved in Phase Two of the research, you can register your interest by emailing me at cl355@students.waikato.ac.nz. A quick prompt reminder will be at the end of this questionnaire.

Thank you for your time

Coadette Low
cl355@students.waikato.ac.nz
Master of Educational Leadership Candidate
University of Waikato

Supervisor: Dr Rachel McNae rachel.mcnae@waikato.ac.nz

Demographics

1. Gender

Mark only one oval.

- ◯ Male
- ◯ Female
- ◯ Gender Diverse
- ◯ Prefer not to say

2. Age

Mark only one oval.

- ◯ <30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ >61

3. What is the decile of the school that you currently teach at?

Mark only one oval.

- ◯ 1 or 2
- ◯ 3 or 4
- ◯ 5 or 6
- ◯ 7 or 8
- ◯ 9 or 10

4. How many years have you been teaching in New Zealand?

Mark only one oval.

- ◯ <2
- ◯ 3-5
- ◯ 6-10
- ◯ 10-14
- ◯ >15

5. How many of those years have you taught Agricultural and Horticultural Science?

Mark only one oval.

- ◯ <2
- ◯ 3-5
- ◯ 6-10
- ◯ 10-14
- ◯ >15

6. How did you get into Agricultural and Horticultural Science teaching?

7. What roles do you currently hold? Tick all that apply

Check all that apply.

- [ ] Principal
- [ ] Deputy Principal
- [ ] Assistant Principal
- [ ] Head of Faculty
- [ ] Assistant Head of Faculty
- [ ] Head of Department
- [ ] Teacher in charge of subject
- [ ] Dean
- [ ] House Leader
- [ ] Boarding House Master
- [ ] Kāhui Ako (across school lead)
- [ ] Kāhui Ako (within school lead)
- [ ] Contracted to NZQA
- [ ] Contracted to MoE
- [ ] NONE OF THE ABOVE

8. From the role/s selected above, what were your reasons for taking them on?

As an Agricultural and Horticultural Science teacher, I enjoy...

9. The ever-changing contexts of what I teach

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

10. That there are no specific textbooks

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

11. That I can create my own program

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

12. The holidays

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

13. The extra-curricular aspects - e.g., YF competitions, practical courses

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

14. The support of the industry

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

15. The contacts that are made through networking opportunities

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

16. The students that I teach

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

17. That the subject has career pathways attached to it.

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

18. That it is an option subject, so students elect to take it

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

19. The salary that I receive

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

20. The diversity of teaching contexts i.e., every day is different

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

21. The relationships formed with students

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

22. The professional development available

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

23. The diversity of the students that I teach

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

24. The financial security of the job

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

25. The practical components

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

26. That it is discussion-based teaching

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

As an Agricultural and Horticultural Science teacher, I have found the following challenges

27. That the subject can be a "dumping" ground for students

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

28. That there are no specific textbooks

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

29. That the Senior Management Team does not understand the need for trips and/or time out of school

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

30. Being a stand-alone subject

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

31. Being placed within the Science Faculty

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

32. Being overlooked as a subject

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

33. The negative comments and opinions from others about the subject

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

34. Being the only teacher of the subject within the school

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

35. That it is not seen as an academic subject

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

As an Agricultural and Horticultural Science teacher, I believe that the following would benefit me as a teacher

36. An increase in pay

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

37. More support from the Senior Management Team

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

38. More support from the community

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

39. More support from colleagues

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

40. More resources provided, e.g., a textbook or workbook

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

41. Having a mentor Agricultural and Horticultural Science teacher

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

42. Being partnered up with a mentor within the subject when I was beginning my teaching career as an Agricultural and Horticultural Science teacher

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

43. More professional development opportunities, e.g., able to attend field days, B+L days.

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

Thinking about the next 5-10 years, I see myself...

44. Leaving teaching and heading into industry

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

45. Heading into a Senior Management or Leadership role

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

46. Staying within the classroom, and continuing to teach Agricultural and Horticultural Science

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

47. Staying within the classroom, but not teaching Agricultural and Horticultural Science

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

48. Not sure yet, but I know I will not be teaching

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

49. Teaching overseas

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

50. Being overseas, but not sure what I will be doing

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

Submission

By pressing the 'submit' button you constitute consent for your responses to be used for the research outlined. As no emails have been recorded your response's provided will remain anonymous.

Phase Two:
If you have taught Agricultural and Horticultural Science for more than five years and would be interested in participating in an online video interview between mid July and late August 2022, please email your interest to cl355@students.waikato.ac.nz

Appendix D: HATA email database and Facebook distribution

Seeking Participants

I am currently completing my MEdLeadership thesis with the University of Waikato exploring *'What factors sustain Agricultural and Horticultural Science curriculum leaders within the profession in New Zealand?'*.

I would like to hear your perspective and gain insights into what factors sustain you as a secondary school Agricultural and Horticultural Science teacher in New Zealand. I am interested in what sustains the motivation and engagement of these teachers and the desire to remain in the profession. Furthermore, through an appreciative inquiry lens it will allow insight and recommendations formed in relation to retaining competent and experienced Agricultural and Horticultural curriculum leaders, and how this knowledge could be applied to those currently in or entering the profession. Retainment of curriculum experts is not only beneficial to the students, but also to New Zealand, as the subject area is of national significance.

There are two parts to my research project. Phase One is an online questionnaire invitation which has been sent to all HATA members. Completing the questionnaire will take no longer than 10 minutes and all responses will remain anonymous. The online questionnaire will remain open for two weeks, closing on {insert date}, with your data being used in the context of the thesis, with the likelihood of journal articles, conference presentations and/or class presentations.

Phase Two is an online video interview and will be undertaken between July and August and will require an hour of your time where you will be sharing your perspective and insight into what sustains you as an Agricultural and Horticultural Science teacher (>5 years' experience).

You can choose to be involved in Phase One by clicking the link below and completing the questionnaire. At the end of the questionnaire, you will be invited to register your interest if you would like to be considered to participate in Phase Two. Note for Phase Two you are required to have been currently teaching Agricultural and Horticultural Science for more than five years.

The link to the online questionnaire (Phase One):
https://forms.gle/NbgQZq4JLeu3MFS7A

Thank you for your time

Coadette Low
cl355@students.waikato.ac.nz
Master of Educational Leadership Candidate
University of Waikato

Supervisor: Dr Rachel McNae rachel.mcnae@waikato.ac.nz

This research has been approved by the University of Waikato Division of Education Ethics Committee on 13/05/2022. Approval number: FEDU027/22

Appendix E: Email for Phase Two Interview

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Dear Participant {Name},

Thank you for agreeing to take part in Phase Two of data collection, which is a one-hour online interview on {insert date + time + meeting link}.

Please find attached the questions {attachment, Appendix F), that you will address, but are not limited to as it is semi-structured in format. I am emailing you 72 hours prior to the interview time, to allow you time to view the questions. Being transparent will allow you to answer them to the best of their ability, as I am interested in what sustains your motivation and engagement and your desire to remain in the profession.

It also allows you the opportunity to withdraw from participating based on the questions you will be answering. If this is the case, please email me that you wish to no longer participate, with no reason being required by {insert date}.

Please do not hesitate to contact me by email cl355@students.waikato.ac.nz or by phone on 0212375266 if you have any questions regarding this research or use of your transcript. If you have any further concerns about the study, you may also contact my Supervisor, Director of the Centre for Educational Leadership Research, Dr Rachel McNae rachel.mcnae@waikato.ac.nz

Kind regards,

Coadette Low

KO TE TANGATA • **FOR THE PEOPLE**

This research has been approved by the University of Waikato Division of Education Ethics Committee on 13/05/2022. Approval number: FEDU027/22

Appendix F: Phase Two Semi-Structured Questions

Individual Semi-Structured Interviews - 1 hour video call

1. How did you get into Agricultural and Horticultural Science teaching?
2. What do you enjoy about teaching Agricultural and Horticultural Science?
3. What things do you feel support you as an Agricultural and Horticultural Science teacher?
4. What advice would you give to someone looking at entering the profession, or upskilling to teach Agricultural and Horticultural Science?
5. What would you consider to be constraints or challenges that you have encountered teaching Agricultural and Horticultural Science?
6. Where do you see yourself in the next 5 to 10 years with regards to your career?
7. What management, leadership or volunteer roles do you hold outside of the role as a classroom teacher? Thinking of these roles, how did you get into them, and how do they serve you within a personal and/or professional capacity?
8. Thinking of Senior Management/Leadership teams, what do you feel that they could do to ensure that they are being supportive, forward-thinking, and responsive to attracting and also retaining Agricultural and Horticultural Science teachers?

<u>From Phase One Analysis:</u>

- In regard to demographics, Male respondents on average had been teaching 11.6 years (10.5 of them Ag/Hort), whereas female respondents 13.1 years (7.5 of them Ag/Hort). What are your thoughts on the reasons for this?
- Workload was indicated to be a challenge, and also a reduction would be of benefit. Given the practicality of how schools operate, how do you feel this could be achieved?
- Negative comments and opinions about the subject being a challenge were identified. In your opinion what could be done to enlighten those and also increase the perceived academic nature of the subject?
- Support from industry was rated high, so in your eyes what additional professional development needs to be available?
- It was identified that having a mentor as an early career Ag/Hort Science teacher would be of benefit. Given that in most schools often there is only one teacher, how would you envision this to work?
- How is having a strong collaborative network of Ag/Hort Science teachers around you of benefit to you both personally and professionally?

- Future of the profession: 35% either Agree (19%) or Strongly Agree (16%) that they would leave the profession in the next 5 years and head into industry. 22% unsure, but will not be teaching. 48% either agree or strongly agree that they will be staying in the classroom as an Ag/Hort Science Teacher. Thinking of those statistics, why do you think those results came through?

Appendix G: Consent Form for Phase Two

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Dear Participant {insert name},

Thank you for taking part in Phase One of data collection and expressing your interest that you would like to participate in Phase Two, the semi-structured interview. If you have since changed your mind about being involved in the research, please just reply to this email to formally indicate this.

I am currently completing my MEdLeadership thesis looking at *'What factors sustain Agricultural and Horticultural Science curriculum leaders within the profession in New Zealand?'*. The purpose of Phase Two of data collection is to gain an in-depth understanding and representation of your perspective and insight into what factors sustain you as a secondary school Agricultural and Horticultural Science curriculum leader. These findings will enable me to identify the reasons and influences that sustain Agricultural and Horticultural curriculum leaders in New Zealand.

I am inviting you to be involved in Phase Two, which is a semi-structured interview that will be recorded. Time requirements for this will be a total of five hours. 72 hours prior to the online interview you will receive an email outlining the questions that will form the basis of the interview. Reading, and reflection on these will take no longer than two hours. The online interview will be one hour long, and then once the interview has been transcribed, you will read it, and amend as necessary which I anticipate will take another 2 hours.

The semi-structured interview will take place over online video call, and at a time that is suitable for you between mid-July and late-August {insert dates for main application}. As the data collected will be looking at your views and perceptions, pseudonyms will be used in the transcripts and therefore in published work your responses remain confidential. However, as I am only looking at the perspectives of five Agricultural and Horticultural Science teachers there is always the potential that as a participant you could be identified from the context. For this I will do my best when describing the context to do my best to make it as anonymous as possible. Your data will be used in the context of the thesis, with the likelihood of journal articles, conference presentations and/or class presentations, but all due anonymity and confidentiality protocols will be in place.

As a participant you have the right to withdraw from the research, and your transcript will come with this statement "In order to formally withdraw and take away your data, you need to contact me within two weeks of receiving the transcript". This will allow me to have the time, and the ability to withdraw your data. A formal request to be withdrawn will need to be received by {insert date}.

I will provide you with a summary of the findings, which will also be provided to the HATA which can be emailed out via the database and placed onto the Facebook page. The

completed Master of Educational Leadership Research Thesis will be written up as an article/publication that people can access.

Please do not hesitate to contact me by email cl355@students.waikato.ac.nz or by phone on 0212375266 if you have any questions regarding this research. If you have any further concerns about the study, you may also contact my Supervisor, Director of the Centre for Educational Leadership Research, Dr Rachel McNae rachel.mcnae@waikato.ac.nz

Thank you for your time

Coadette Low

Consent:

[ ] I have read this form and know:

- the purpose of the research
- interview length
- what the interview is about
- that the interview will be recorded and transcribed
- how the information will be used
- my right to confidentiality/anonymity
- my rights to withdraw from the project
- my right to decline questions
- that I will get my transcript (with pseudonyms) to check prior to use

[ ] I consent to participating in the semi-structured interview.

Name: _____
Signature: _____ Date:_____
Contact Phone number/s: _____
Email Address: _____

KO TE TANGATA • **FOR THE PEOPLE**

This research has been approved by the University of Waikato Division of Education Ethics Committee on 13/05/2022. Approval number: FEDU027/22

Appendix H: Participant Transcript Check

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Dear Participant {Name},

Thank you for taking part and giving up your time to share your insights and perspectives into what sustains you as a secondary school Agricultural and Horticultural curriculum leader during the semi-structured interview we had on {insert date}. Your data will be used in the context of this thesis, with the likelihood of journal articles, conference presentations and/or class presentations, but all due anonymity and confidentiality protocols will be in place.

Please find attached your transcript, with a suggested pseudonym so that your real name is not used. Have a read through, check that what I have recorded in this transcript aligns with what you have said in the interview. If amendments are made, please make contact with me via email within two weeks of receiving the transcript by {insert date}.

As indicated on the consent form, you have the right to withdraw and remove the data that you have provided, so that it will no longer be able to be used. In order to formally withdraw and take away your data, you need to contact me via email (cl355@students.waikato.ac.nz), within 2 weeks of receiving the transcript by {insert date}. This will allow me to have the time, and the ability, to withdraw your data.

Please do not hesitate to contact me by email cl355@students.waikato.ac.nz or by phone on 0212375266 if you have any questions regarding this research or use of your transcript. If you have any further concerns about the study, you may also contact my Supervisor, Director of the Centre for Educational Leadership Research, Dr Rachel McNae rachel.mcnae@waikato.ac.nz

Kind regards,

Coadette Low

KO TE TANGATA • **FOR THE PEOPLE**

This research has been approved by the University of Waikato Division of Education Ethics Committee on 13/05/2022. Approval number: FEDU027/22

Appendix I: Ethics Approval

Te Wānanga Toi Tangata
Division of Education
The University of Waikato
Private Bag 3105
Hamilton,
New Zealand, 3240

Division of Education Research
Ethics Committee (DEREC)
fedu.ethics@waikato.ac.nz
www.waikato.ac.nz

13/5/2022

Dear Coadette Low

Division of Education Research Ethics Committee Application Approved
FEDU027/22

I am pleased to advise you that your ethics application for the project entitled "Factors that Sustain Curriculum Leaders in the Profession: Perspectives of Secondary School Agricultural and Horticultural Science Teachers in New Zealand." was approved by Te Wānanga Toi Tangata Division of Education Research Ethics Committee on May 13th, 2022.

Please be aware that the Te Wānanga Toi Tangata Division of Education Research Ethics Committee must be advised (by memo) of any changes to the details recorded in your ethics application. Please send any such advice to fedu.ethics@waikato.ac.nz. You will receive a memo of approval once the change(s) has been considered.

Kind regards

Co-chairs
Te Wānanga Toi Tangata Division of Education Research Ethics Committee (DEREC)

Appendix J: Seeking Permission from the Principal

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Dear Principal {insert name} of {insert school},

I am currently completing my MEdLeadership thesis with the University of Waikato looking at *'What factors sustain Agricultural and Horticultural Science curriculum leaders within the profession in New Zealand?'*. There are two parts to my research project. Phase One is an online questionnaire invitation which has been sent to all HATA members, which was open {insert dates}, with Phase Two being an online video interview. These findings will enable me to identify the reasons and influences that sustain Agricultural and Horticultural curriculum leaders in New Zealand. Furthermore, through an appreciative inquiry lens it will allow insight and recommendations formed in relation to retaining competent and experienced Agricultural and Horticultural curriculum leaders, and how this knowledge could be applied to those currently in, or entering the profession. Retainment of curriculum experts is not only beneficial to the students, but also New Zealand, as the subject area is of national significance.

{Insert participant name} registered their interest in participating in Phase Two via email. I am seeking permission from you as the principal of {insert school name} that {insert participant name} to participate in this phase. Phase Two allows for me to gain a deeper insight into teachers of whom have taught Agricultural and Horticultural Science for more than five years, and what sustains their motivation and engagement, and the desire to remain in the profession. I am seeking your permission as the information that is shared could be about colleagues, or senior leadership at the school. Confidentiality will be assured, for example, what they say to me is confidential, and not revealed without pseudonyms, however, anonymity cannot be guaranteed as the sample size for Phase Two is small, only five participants, therefore there is the potential that participants could be identified from the context. For this I will do my best when describing the context to do my best to make it as anonymous as possible.

If you give your permission for {insert participant name} to participate, they will receive the transcript, with pseudonyms, to check before any of the data collected will be used. At this time, they are able to make changes, or withdraw their data from being used. Could you please complete the following consent form and return it to me, either *giving permission, or not giving permission*, for {insert participant name} to participate in Phase Two.

Please do not hesitate to contact me by email cl355@students.waikato.ac.nz or by phone on 0212375266 if you have any questions regarding this research. If you have any further concerns about the study, you may also contact my Supervisor, Director of the Centre for Educational Leadership Research, Dr Rachel McNae rachel.mcnae@waikato.ac.nz

Kind regards,

Coadette Low

Consent:

[ ] I have read this form and know:

- the purpose of the research
- who is involved
- interview length and the what the interview is about
- that the interview will be recorded and transcribed
- how the information will be used
- that confidentiality of the participant will be assured, but anonymity cannot be guaranteed.
- the participant has the right to withdraw from the project
- the participant has the right to decline questions
- that the participant will get their transcript (with pseudonyms) to check prior to use

Please tick which applies:

[ ] I **give permission** for {insert participant name} to participate in the semi-structured interview.

[ ] I **do not give permission** for {insert participant name} to participate in the semi-structured interview.

Name: _____

Signature: _____ Date:_____

Contact Phone number/s: _____

Email Address: _____

This research has been approved by the University of Waikato Division of Education Ethics Committee on 13/05/2022. Approval number: FEDU027/22