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'The way we do things around here'

**A Consideration of Processes by
which Mathematics Heads of
Faculty Develop Effective
Culture within their Departments**

A thesis submitted in partial fulfilment of the requirements for the degree of

MASTER OF EDUCATIONAL LEADERSHIP

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by

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ABSTRACT

There is a new era in education leadership. While it is difficult to mark its exact beginning, it is clear that there is a movement away from mechanistic towards cultural education leadership. It is characterised by an emerging understanding of more holistic leadership approaches focusing on mastering change instead of control, individual development rather than assurance, and innovation more than standards (Ehlers, 2009). In essence it is the development of an organisational culture based on shared values, necessary competencies and new professionalism.

The importance of organisational culture is a long established idea; great business leaders have known of it for years. The culture of an organisation is like its personality and an informal understanding of ‘the way we do things around here’. It is a generalising and grouping together of the shared understandings of the way things are done, how people within it organise and interact. Many school leaders spend considerable time building cohesive school cultures (Deal & Kennedy, 1983). This study looks at the level of the Head of Faculty, (hence forth referred to as Head of Department as it is the most recognised term within the teaching field); specifically at how mathematics department leaders develop effective culture within their departments. Heads of Department are in a position to build inspiring workplace cultures that will create an atmosphere of high-performance, innovation, collaboration, and opportunity.

To provide a framework from which to view the research a comprehensive literature review of the concepts of organisational culture, subcultures developed through secondary school¹ departments and secondary school department leadership practices and processes was conducted. Thereafter, a small-scale qualitative study was undertaken using a semi-structured interview process to gather data from five mathematics Heads of Department, focusing on their experiences related to organisational culture. Themes that emerged from the data first centred on observable behaviour and artifacts which were initial department design, physical environment, leadership structure, and style. The second set of themes looked at shared values, rules, and behavioural norms which were building

¹ Secondary school is the same as high school

a shared philosophy and vision; anxiety and conflict; and critical self-reflection. The third set of themes covered basic underlying assumptions and they were communication, being centred on learners, and building a climate of trust.

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TABLE OF CONTENTS

| | |
|--|-----------|
| ABSTRACT | ii |
| ACKNOWLEDGEMENTS | iv |
| TABLE OF CONTENTS | v |
| LIST OF FIGURES | ix |
| LIST OF TABLES..... | ix |
| CHAPTER ONE: INTRODUCTION | 1 |
| 1.1 INTRODUCTION | 1 |
| 1.2 WHY IS DEPARTMENTAL CULTURE IMPORTANT?..... | 2 |
| 1.3 WHAT CONSTITUTES AN EFFECTIVE DEPARTMENTAL CULTURE?..... | 3 |
| 1.4 RESEARCHER CONTEXT | 4 |
| 1.5 OUTLINE OF THE THESIS | 6 |
| CHAPTER TWO: LITERATURE REVIEW | 7 |
| 2.1 INTRODUCTION | 7 |
| 2.2 ORGANISATIONAL CULTURE | 7 |
| 2.2.1 Defining Culture | 8 |
| 2.2.2 Defining Organisational Culture | 9 |
| 2.2.3 The Elements of Organisational Culture | 11 |
| 2.2.4 Schools and Organisational Culture..... | 14 |
| 2.2.5 Organisational Culture and Leadership..... | 14 |
| 2.2.6 Section Summary..... | 16 |
| 2.3 SECONDARY SCHOOL DEPARTMENTS – DO THEY CREATE SUBJECT SUBCULTURES? | 17 |
| 2.3.1 The Head of Department and the Creation of Subcultures | 18 |
| 2.3.2 The Influence of Secondary School Physical Structure on Subculture Development..... | 19 |
| 2.3.3 External Subject Communities Influence on Subcultures..... | 20 |
| 2.3.4 Subjects Differences Reinforce Distinctive Subcultures..... | 20 |

| | | |
|-------|---|-----------|
| 2.3.5 | Section Summary..... | 22 |
| 2.4 | SECONDARY SCHOOL DEPARTMENT LEADERSHIP PRACTICES AND PROCESSES | 23 |
| 2.4.1 | Collegial Department Leadership..... | 25 |
| 2.4.2 | Clear and Shared Sense of Philosophy and Vision..... | 27 |
| 2.4.3 | Team Empowerment, Commitment and Trust | 28 |
| 2.4.4 | The Learner at the Centre..... | 30 |
| 2.4.5 | Communication | 31 |
| 2.4.6 | Collaboration and Autonomy..... | 33 |
| 2.4.7 | Collegial Physical Environments..... | 33 |
| 2.4.8 | Section Summary..... | 33 |
| 2.5 | CHAPTER CONCLUSION | 34 |
| | CHAPTER THREE: RESEARCH METHODS | 36 |
| 3.1 | INTRODUCTION | 36 |
| 3.2 | EDUCATIONAL RESEARCH AND PARADIGMS..... | 36 |
| 3.3 | METHOD FOR THIS RESEARCH..... | 39 |
| 3.4 | ISSUES OF REPRESENTATION AND QUALITY..... | 40 |
| 3.5 | ETHICAL CONSIDERATIONS..... | 42 |
| 3.5.1 | Procedure for the selection of the participants | 43 |
| 3.5.2 | The right to privacy through confidentiality..... | 45 |
| 3.5.3 | Social and cultural issues..... | 45 |
| 3.6 | DATA COLLECTION METHODS | 46 |
| 3.6.1 | The interview..... | 46 |
| 3.6.2 | Artifacts | 47 |
| 3.6.3 | Research Journal/Field Notes..... | 48 |
| 3.7 | DATA ANALYSIS STRATEGIES..... | 48 |
| 3.7.1 | The Interviews..... | 49 |
| 3.7.2 | The Artifacts..... | 50 |
| 3.8 | CHAPTER CONCLUSION | 50 |

| | |
|--|-----------|
| CHAPTER FOUR: RESEARCH FINDINGS | 51 |
| 4.1 INTRODUCTION | 51 |
| 4.2 CASE STUDY PROFILES..... | 52 |
| 4.3 MAKING A START – THE DEVELOPMENT OF EFFECTIVE DEPARTMENTAL CULTURE | 54 |
| 4.3.1 Assessing and Initial Shaping of the Departmental Culture ... | 54 |
| 4.3.2 Philosophy | 56 |
| 4.3.3 Vision for the Department | 57 |
| 4.3.4 Physical Environment..... | 58 |
| 4.3.5 Building Trust | 59 |
| 4.3.6 Managing Teachers’ Response to Evolving Departmental Culture | 60 |
| 4.4 THE LONG HAUL – EVOLVING EFFECTIVE DEPARTMENTAL CULTURE | 60 |
| 4.4.1 Style of Leadership | 61 |
| 4.4.2 Learner Centred..... | 63 |
| 4.4.3 Communication | 64 |
| 4.4.4 Recruitment and Retention | 66 |
| 4.4.5 Capacity Building | 68 |
| 4.4.6 Celebrations..... | 69 |
| 4.4.7 Reflection | 69 |
| 4.4.8 Strengthening Culture Through Team Empowerment..... | 70 |
| 4.5 CHAPTER CONCLUSION | 70 |
| CHAPTER FIVE: DISCUSSION | 72 |
| 5.1 INTRODUCTION | 72 |
| 5.2 OBSERVABLE BEHAVIOUR AND ARTIFACTS | 72 |
| 5.2.1 Initial Department Design - Developing the Culture | 72 |
| 5.2.2 Physical Environment - Proximity of Teachers and Accessibility to the Head of Department..... | 75 |
| 5.2.3 Leadership Structure and Style..... | 76 |
| 5.3 SHARED VALUES | 79 |
| 5.3.1 Building a Shared Vision | 80 |

| | | |
|--|---|------------|
| 5.3.2 | Anxiety and Conflict from Issues of Power | 81 |
| 5.3.3 | Critical Self Reflection | 83 |
| 5.4 | UNDERLYING ASSUMPTIONS..... | 84 |
| 5.4.1 | Communication | 85 |
| 5.4.2 | Centred on Learning | 86 |
| 5.4.3 | Climate of Trust..... | 88 |
| 5.5 | CHAPTER CONCLUSION | 89 |
| CHAPTER SIX: CONCLUSIONS AND IMPLICATIONS | | 90 |
| 6.1 | INTRODUCTION | 90 |
| 6.2 | CONCLUSIONS FROM THE RESEARCH | 90 |
| 6.3 | IMPLICATIONS OF THE RESEARCH..... | 91 |
| 6.4 | LIMITATIONS AND AREAS OF FURTHER RESEARCH..... | 92 |
| REFERENCES | | 95 |
| APPENDICES..... | | 116 |
| APPENDIX A: LETTER TO SECONDARY SCHOOL MATHEMATICS ADVISORS.... | | 116 |
| APPENDIX B: INVITATION LETTER TO THE MATHEMATICS HEAD OF DEPARTMENT | | 118 |
| APPENDIX C: PARTICIPANT INFORMATION SHEET | | 120 |
| APPENDIX D: PARTICIPANTS CONSENT FORM | | 124 |
| APPENDIX E: LETTER TO THE SCHOOL PRINCIPAL | | 125 |
| APPENDIX F: INTERVIEW QUESTIONS FOR THE HEAD OF DEPARTMENT..... | | 127 |
| APPENDIX G: RETURN OF TRANSCRIPTS | | 129 |
| APPENDIX H: RELEASE OF TRANSCRIPT FOR USE | | 130 |

LIST OF FIGURES

| | |
|---|----|
| Figure 1: Researcher's initial perception of departmental culture | 4 |
| Figure 2: Researcher's revised perception of departmental culture..... | 5 |
| Figure 3: The 'onion'- manifestations of culture at different levels of depth (Geert Hofstede & Hofstede, 2005, p. 7) | 8 |
| Figure 4: Levels of Culture (Schein, 2004, p. 26)..... | 12 |

LIST OF TABLES

| | |
|--|----|
| Table 1: Summarised details for schools participating in the research..... | 44 |
|--|----|

CHAPTER ONE: INTRODUCTION

*Cultural understanding is desirable for all of us,
but it is essential for leaders if they are to lead (Schein, 2004, p. 23).*

1.1 INTRODUCTION

Culture is a concept that covers many ideas. It has been used by the lay person as a word to indicate sophistication, as in when someone is ‘cultured’.

Anthropologists refer to it as the customs and rituals that societies develop over the course of their history. In the last few decades or so it has been utilised by researchers and managers to indicate the climate or ethos, and practices that organisations develop around their handling of people (Schein, 2004). The education system has referred to culture as the ‘life-world’ of a school, a term originally used by the German philosopher and sociologist Habermas (1979).

Sergiovanni (2000) and Louis (1980) discuss how leadership has many focuses, but an important aspect of it is to protect the ‘life-worlds’ of schools. ‘Life-world’ is a world of purposes, norms, growth and development, and ‘systems-world’ is a world of efficiency, outcomes and productivity (Bennett, Crawford, & Cartwright, 2003). The terms ‘life-world’ and ‘systems-world’ are used to describe culture versus the management of an organisation. In schools this ‘life-world’ provides the foundation for the development of social capital, which then further enriches the ‘life-world’ itself, developing a cycle of cultural evolution (Putnam, 2002). The ‘life-world’ can be contrasted with the ‘systems-world’. The ‘systems-world’ provides the foundations for the developments of management and the organisational capital and financial capital that helps schools effectively and efficiently to achieve their goals and objectives. This is a cycle of ‘material reproduction’. Ideally, the ‘life-world’ and ‘systems-world’ should engage each other in a symbiotic relationship that has the potential for them to strengthen each other.

Culture with shared visions, values and beliefs at its heart, serves as the ‘life-world’ compass setting, steering people in a common direction by providing a framework for deciding what does or does not make sense (Sergiovanni, 2007). This is echoed by Schein (2004) when he discusses how one of the most decisive functions of leadership is the creation, management and evolution of a culture.

1.2 WHY IS DEPARTMENTAL CULTURE IMPORTANT?

A Head of Department in a secondary school has the responsibility of leading a department consisting of a range of staff who teach a specific or related subject that is usually offered from Year 9 (entry level) to Year 13 (exit level). Promotion to the Head of Department position is usually achieved by an experienced member of staff with a proven track record of successful classroom teaching, and involves an amalgam of knowledge, understanding, skills and attributes that can be applied to the accomplishment of a variety of tasks (C. Turner, 2000). By connecting theory and practice, expectation and implementation, and policy and procedure the Head of Department is an important link between a school’s Senior Leadership Team and what goes on in classrooms (O’Neill, 2000a; Wright, 2002). Yet Heads of Department are often squeezed and made breathless by these demands.

With an understanding of the prevailing departmental culture, Heads of Department gain insight into how intertwined their own behaviour is with culture creation (Schein, 2004). This allows them to identify the priority issues for their leadership and work towards helping teachers define and experience meaning that stimulates learning, development and planned change. Effective culture provides the internal cohesion that makes it easier for teachers to teach and students to learn (Deal & Kennedy, 1983). It governs the way people interact with each other (Bennett et al., 2003) and is necessary for leadership across national and ethnic boundaries. Without awareness of cultural dynamics, decisions made may have unanticipated and undesirable consequences. When a culture is toxic and works against a group it is nearly impossible to get anything done well (Deal & Kennedy, 1983). The bottom line for Heads of Department is that if they do not

become conscious of the cultures in which they are embedded and take a role in leading their evolution, then those cultures will manage them (Schein, 2004).

1.3 WHAT CONSTITUTES AN EFFECTIVE DEPARTMENTAL CULTURE?

Effectiveness is an elusive concept. It has been used in this research in a broad sense to refer to practices that enable desired outcomes to be achieved where the success of all students is promoted by advocating, nurturing, and sustaining a department and a teaching program conducive to student learning and staff professional growth.

Additionally what makes culture effective is its contextual nature. Within the literature on organizational culture it will become evident that the organisational culture reflects the values which are at the heart of that organisation. A value leads to behaviour, and as that behaviour begins to solve the problem which prompted it in the first place, the value gradually is transformed into an underlying assumption about how things really are (Schein, 2004). Therefore a consideration of what leadership processes are essential to effective departmental culture is important to help Heads of Department focus on what to develop and prioritise energy for.

Effective departmental culture is an evolving process, something that is dynamic and has to be continually worked on, rather than a pinnacle of achievement. Throughout the rest of this thesis the term ‘developing culture’ will be used to encapsulate both developing and evolving culture. However chapter four where the findings of the research have been presented has purposely been separated into:

- Making A Start – The development of effective departmental culture
- The Long Haul – Evolving effective departmental culture.

This was to incorporate different processes that Heads of Department may employ when first being appointed to the role, in comparison to Heads of Department who have been with that department for many years.

1.4 RESEARCHER CONTEXT

An important question every researcher must begin by asking is - what does he or she hope to gain from the analysis? I elected to undertake this study because I have always had a passion for mathematics education and this, combined with curriculum strengths, led me to positions of leadership in mathematics curriculum within a secondary school, and also regionally and nationally. When first placed in the position of curriculum leadership I felt bombarded by the extent, complexity and scope of the job. There was little formal preparation or on-going educational support for this pivotal role. Mathematics departments can be large as it is a subject most secondary school students take until the end of Year 12, and some are, in fact, larger than many New Zealand primary schools. However I enjoyed the challenge of this role.

In the beginning I believed there were three equal parts to the puzzle: curriculum leadership, departmental management, and departmental culture development. I found there were constant tensions between them and what eluded me most was the development of organisational culture. After reading Gemmill's (1991) thesis on understanding organisational culture through the employee experience, I developed figure one below to illustrate how I found these three aspects of the leadership role interacted.

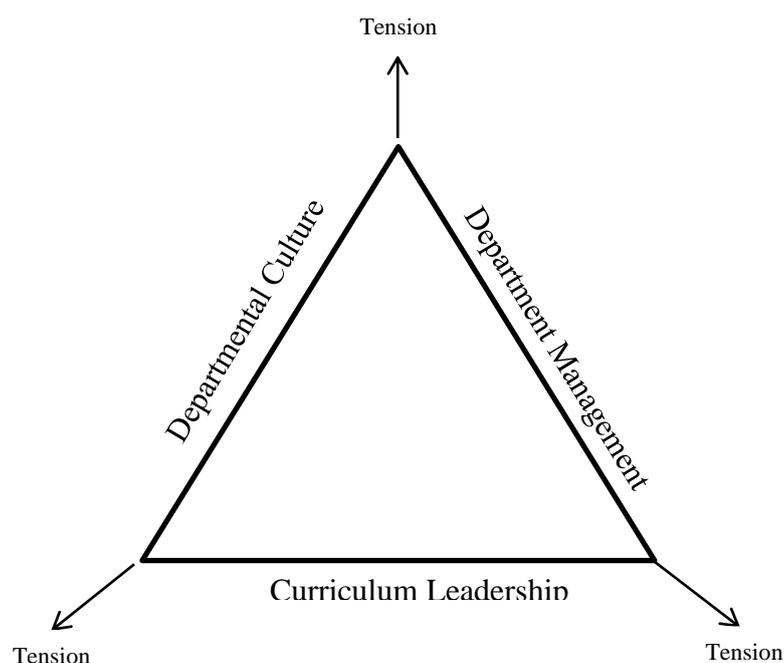


Figure 1: Researcher's initial perception of departmental culture

I was often pulled in directions by curriculum or administration with limited time to spend on the proactive development of departmental culture. As the nature of the Head of Department role is highly people-centred, this meant that I frequently had the feeling that the need to be mindful of and supportive of student and teacher feelings, attitudes, beliefs and behaviours was being undermined and undervalued.

During my time in curriculum leadership, while most staff members in the department were enthusiastic and co-operative teachers, happy to explore and try new things, there were some who caused the group stress and frustration, making the job difficult. After reading the literature on organisational culture and gaining insight into some of the forces at work, while also identifying and dealing with my own prior expectations and stereotypes, I came to see that organisational culture is the umbrella under which all other aspects of leadership reside (figure two).



Figure 2: Researcher's revised perception of departmental culture

This led to the heart of the topic that guides this research:

A consideration of processes by which Mathematics Heads of Department develop effective culture within their departments.

In reflecting on this question it is important to acknowledge that there will always be the personal and professional views from the researcher (Gergen, 2009). Being a leader in the mathematics community will mean I have had professional experiences in the area of this research.

From a wider perspective, research is conducted to benefit others and inform collective practice for the better. While this particular research does not claim to be exhaustive, a rigorous search of the literature failed to identify much study of secondary school departmental leadership from the perspective of departmental culture, and so the hope is that this research will help to address this, and that the insights gained might assist in informing future practices of mathematics Heads of Department.

1.5 OUTLINE OF THE THESIS

Chapter One introduces the reader to the emergence of the overarching research statement, and the significance of the exploration and findings of departmental culture to the researcher and secondary school colleagues. Chapter Two provides important background for the research and a review of the literature is provided in three sections. The first discusses organisational culture, the second provides insight into the existence of subcultures, and the third looks at secondary school department leadership practices and processes. Chapter Three addresses the methodological framework for the gathering and analysis of the research data, and explains the underpinning theoretical framework of the research. Details regarding participants and the data collection methods employed in the research are expanded upon, and anonymity and ethical issues and considerations are discussed. Chapter Four presents the findings, while in Chapter Five issues and themes are discussed in detail and linked back to the literature. The conclusions and discussion in Chapter Six provide a critical reflection of the research.

CHAPTER TWO: LITERATURE REVIEW

People strive to comprehend the world in which they work.

To get deeper understanding, you need to study the world more systematically

(H. Rubin & Rubin, 2005, p. 1).

2.1 INTRODUCTION

In chapter one I described how I had experienced concerns of my own when working towards developing effective culture during my leadership roles within secondary school mathematics departments. This chapter situates the present study within the relevant literature and identifies gaps within this. It has been divided into three parts: organisational culture, subcultures created by secondary school departments, and secondary school department leadership processes and practices. This last section was included because an important role of leadership within departments, as well as overall, is to maintain a supportive and motivational organisational culture.

2.2 ORGANISATIONAL CULTURE

Academic literature attributing culture to organisations first appeared in the 1960's and became fashionable during the corporate boom of the early 1980's (Ehlers, 2009; Geert Hofstede, Hofstede, & Minkov, 2010). The stance of popular management authors and consultants was to use corporate culture as a tool for competitiveness and excellence, especially after the seminal publication of 'In Search of Excellence' (1982) by Peters and Waterman. Economic factors that enhanced the increased interest in organisations in the 1980's were the boom of Japanese companies and corresponding difficulties for the United States and other Western economies (Alvesson, 2002; Plakhotnik & Rocco, 2011). Ouchi (1981), in Theory Z suggested that a successful Japanese company values its employees by developing an organisational culture that provides a supportive environment in order to increase employee self-esteem and therefore improve productivity. Since then interest in aspects of organisational culture have continued to be relatively

high among managers, consultants and academics who have recognised it to be a powerful determinant of effectiveness (Ehlers, 2009; Geert Hofstede et al., 2010). It is noteworthy that the academic literature in this field written 30 years ago is largely consistent with what today's authors are writing now.

Alvesson (2002) states, "Traditional organisation research, often objectivist and abstract, has proved incapable of providing deep, rich and realistic understandings" (p. 7). However with the added concept of organisational culture, there is the advantage of a bridge provided to connect any organisation as a whole with its members' everyday experiences and individual actions (Smircich, 1983). Thus the additional concept of culture addresses the lived experiences of people within their various groups.

2.2.1 Defining Culture

Culture looks at the essence of values and beliefs, the expression of needs, the purposes and desires of people, and meanings and significances that give deep sources of satisfaction (Louis, 1980; Schein, 2004; Sergiovanni, 2000). Van Maanen (2011) writes of culture as a set of shared understandings, interpretations or perspectives that enable people to communicate appropriately within the context of their group. When Hofstede and Hofstede (2005) wrote about culture they described typical attributes and behaviours, grouping them in four different depths with the labels of symbols, heroes, rituals and values illustrating them as layers (figure 3). In this figure they accorded the core of culture as formed by values.

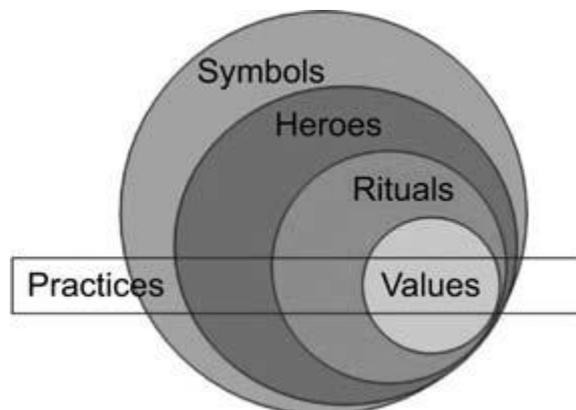


Figure 3: The 'onion'- manifestations of culture at different levels of depth (Geert Hofstede & Hofstede, 2005, p. 7)

The meaning of the word culture stems from the Latin term *cultura* which in turn comes from *colere*, meaning ‘to cultivate’ (Ehlers, 2009). When the word culture is used for both nations and organisations it suggests that the two kinds of culture are identical phenomena. However as Hofstede et al. (2010) point out, this is incorrect as their nature differs in that a nation is not an organisation.

The difference between national and organisational cultures is based on their varied mix of values and practices. National cultures are part of what is acquired during the first years of life, in the family, in the living environment and in school, and they contain most of our basic values. Organisational cultures however, as suggested by their title, are acquired when entering the workforce or other organisational systems as young or not-so-young adults, where values are firmly in place. They consist mainly of the organisation’s own practices and are more amenable to change (Geert Hofstede et al., 2010).

2.2.2 Defining Organisational Culture

There is no standard definition of organisational culture (Sackman, 1991). It is largely an invisible factor. Most people have a good idea about what the culture they are involved with is about, but they may have difficulty defining it. Often it is used as a concept for generalising and grouping together shared understandings, and is referred to as “the way things are done around here” (Hargreaves, 1994, p. 166).

Schein (1983), one of the most prominent theorists of organisational culture, defines it as the learnt result of group experiences which is to an extent unconscious.

A pattern of shared basic assumptions that the group has learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems. (p. 373)

Albert, Ashforth and Dutton (2000) agreed with this definition when they stated that organisational culture is a powerful explanatory term for an organisation's response to internal and external stressors. Hesselbein (1999) described organisational culture as a set of values, practices and traditions that define who we are as a group, while Hofstede and Hofstede (2010) described it as 'mental coding' which every member of a society, organisation or group experiences, and according to which everyone can act coherently.

Coming from another direction, Alvesson (2002) writes about organisational culture as being important to people for symbolism (of rituals, myths, stories and legends) and the interpretation of events, ideas and experiences that are influenced and shaped by the groups within which they live. This definition places values and assumptions in a less central position in line with the view broadly shared by many modern anthropologists, and also work undertaken by Geertz (1973), when he suggested in ground-breaking research at the time that culture is understood to be a system of common symbols and meanings.

In this study both ways of looking at organisational culture will be employed. Given that occupational cultures can be considered to be a combination of both values and practices (Geert Hofstede & Hofstede, 2005), most researchers who write about organisational culture would probably agree that it is all of the following:

- Holistic: referring to a whole that is more than the sum of its parts.
- Historically determined: reflecting the history of the organisation.
- Related to aspects anthropologists study: such as rituals and symbols.
- Socially constructed: created and preserved by the group of people who together form the organisation.
- Soft: although intriguingly Peters and Waterman (1982) assure their readers that "soft is hard" (p. 319).
- Difficult to change: although authors disagree on *how* difficult (Geert Hofstede et al., 2010).

2.2.3 The Elements of Organisational Culture

Organisational culture functions in the way that members of organisations live their values and act in their routines without necessarily consciously thinking about them (Ehlers, 2009). This characteristic differentiates the culture of a group from the management of it. Whereas most organisational systems can be described, analysed and measured to a relatively fixed degree over time, the system of culture is changeable, evolving largely through interaction and to a significant extent unconsciously (Plakhotnik & Rocco, 2011).

Organisational culture is a shared concept. It is held by all of a group, interpreted through the eyes of every individual within it, members and leaders alike. According to Schein (2004), the culture of an organisation is derived and sustained from three sources: the beliefs, values and assumptions of its leaders, the on-going learning experiences of the group members, and the new beliefs, values and assumptions brought in by members and leaders.

Pettigrew (1979) states that purpose, commitment and order are generated in an organisation both through the feelings and actions of its founder, and through the amalgam of beliefs, ideology, language, rituals and myths that are appropriate to it.

Blanchard and O'Connor (1997) argue that individual values are manifested in individual practices that translate into the wider practices within a team. For example, individual approaches to problem solving, decision making and leadership translate into the facilitation practices of a team and its group dynamics. In an organisation this may be reflected by how and what the leader recognises and rewards. Taking these points into consideration therefore, much of the research on organisational culture available so far describes factors relative to the needs and values of individuals, and how they make sense of their lives within their particular groups.

Schein (2004) developed a three level cultural model (see figure two page 12) where artifacts are at the most basic and visible level of an organisation's culture. As they are easy to obtain but hard to interpret, an understanding of them is best

accomplished when they are viewed in conjunction with the deeper, more enduring layers of an organisation's values and basic assumptions. Hence these cultural layers form a continuum from the most easily observable and least determinant to the least easily observable and most influential.

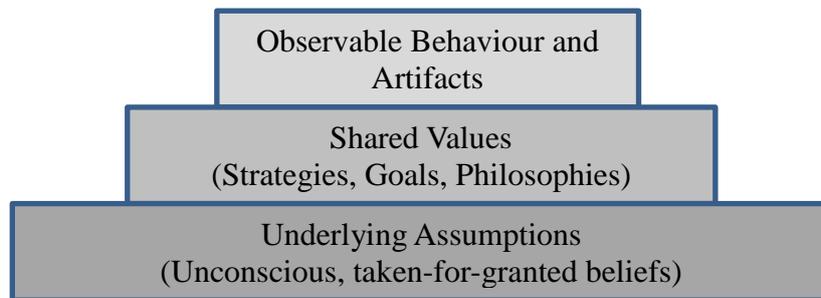


Figure 4: Levels of Culture (Schein, 2004, p. 26)

Seminal theorists who write about organisational culture repeatedly employ key terms when identifying typical attributes and characteristics. Pettigrew (1979) and Dandridge, Mitroff, and Joyce (1980) all suggest that culture is embodied in and transmitted by stories, myths and symbols. A study by Hofstede, Neuijen, Ohayv and Sanders (1990) found that shared perceptions of daily practices were the core of an organisation's culture, while Schein (2004) and Dyer (1982) looked for culture in patterns of assumptions associated with symbolic forms. Schwartz and Davis (1981) preferred the term expectations to those of shared perceptions or symbolic associations.

Ruegg-Sturm in their 2002 study (as cited in Ehlers, 2009) extensively identified norms and values, opinions and attitudes, stories and myths, patterns of thought, language habits and collective expectations as the elements of organisational culture. Morgan (2006) listed values, knowledge, beliefs, legislation and rituals.

Upon consideration of this body of literature there are some terms or themes that are repeatedly associated with the concept of organisational culture to the extent that one may infer that they are common characteristics. Consequently these terms will be explored more fully below:

- symbols of culture: artifacts, architecture and routines,

- rituals and ceremonies,
- values,
- underlying assumptions.

Symbols of culture: Artifacts, architecture and routines. Symbols represent both tangible cultural values and beliefs and also visible organisational processes and various artifacts (Deal & Peterson, 2009). Essentially the symbolism of a culture is what can be observed, heard and felt when encountering any group with an unfamiliar culture (Saffold, 1988; Schein, 2004). For example, the physical structure, dress codes and general condition of a workplace are artifacts that say something about that organisation's culture (Ehlers, 2009). They include words and gestures associated with a group, as well as pictures and/or objects which carry special meaning for those who share the culture (Geert Hofstede & Hofstede, 2005). Cultural symbols can quickly change or disappear with new symbols created or adopted from other cultures. Hofstede, Hofstede and Minkov (2010) discussed how they may also include heroes; persons alive or dead, real or imaginary, who possess characteristics that are highly prized in a culture and serve as models for behaviour. Fullan (2001) wrote about how people can be made to feel part of a success story by making heroes of those who deliver appropriately effective standards of practice.

Rituals and ceremonies are formal statements of organisational philosophy, charters, creeds, materials used for recruitment and selections, and socialisation (Deal & Peterson, 2009; Schein, 1983). These collective activities, which can be technically superfluous to reaching desired ends, are often considered socially essential within a culture (Ehlers, 2009). In some of the literature they were seen as a subset of symbols because they provide tangible opportunities for values to be reinforced, heroes to be celebrated, and symbols to be displayed and exchanged (Deal & Kennedy, 1983).

Values are the strategies, goals and philosophies which are evolved, accepted and acknowledged by the group (Schein, 2004). An organisation's values are apparent in the official objectives, declared norms and operating philosophy. It is critical for these values to be accepted by the group in order for them to reflect the

organisation's true identity. Equally it is essential that there is congruency between the official values of the organisation and the action of individuals within it. "The core of culture is formed by values" (Geert Hofstede et al., 2010, p. 8) For instance, leaders behaviours and values assist (or not) the development of any organisation's culture, and they need to link what they do specifically with the values and beliefs that underpin it (Aitken, 2007).

Underlying assumptions relate to a group's learned solutions to problems relating to external adaptation and internal integration. They influence how the members within an organisation perceive, think and feel in matters relating to it (Schein, 2004). Underlying assumptions function as an unconscious basis for action and a range of decisions that shape a culture further.

In summary, an organisation can show varying degrees and levels of cultural features. Schein (2004) interestingly speculated that strong cultures, which he defined as stable and intense, may be effective for young organisations, but that older organisations may fare better with weaker cultures. Clark (1980) suggested that an organisation with a more diverse and weaker culture may be more effective. Gagliardi (1986) combined these perspectives to outline a process of incremental, or continuously growing culture.

2.2.4 Schools and Organisational Culture

The momentum for studying culture was stimulated, in part, by research in public schools (Deal, 1985) and the concept of culture has now become as influential in education as it has in business. Symbols and rituals have played, and will continue to play, a major role in school performance, both actual and perceived (Westoby, 1988). School leadership continues to emphasise climate (culture) or effective school characteristics as guiding concepts, and this will be further discussed in the next section.

2.2.5 Organisational Culture and Leadership

Leaders play a major part in the construction of organisational culture by working at gaining the positive engagement of employees (Busher & Barker, 2003).

Schein (2004) describes the relationship of culture and leadership as “...two sides of the same coin” (p. 1). Golema, Boyatzis, and McKee (2002), Kouzes and Posner (2007), and Schein (2004) agree that leadership values and practices fundamentally influence organisational culture. Aitken (2007), when researching the nature of leadership within organisational culture, found that the closer the gap between values and leadership behaviour the more positively participants regarded leadership. Yukl (2010) pointed out that the development of an organisation reflects its leadership, and he identified primary mechanisms a leader can use to influence culture. They include the events a leader attends to, the ways he/she reacts to crisis, role modelling, how rewards are allocated and criteria for hiring and dismissal. Similarly, Hesselbein (1999) identified a number of skills and procedures a leader can utilise to influence culture within an organisation:

Scanning the environment for common trends, determining the implication of those trends, revisiting the mission, banning the old hierarchy, challenging the gospel, communicating a compelling message and dispersing the responsibilities of leadership across the organisation, so that we have not one leader but many leaders at every level of the enterprise. (p. 4)

Leadership has more to do with purposes, values and frameworks that motivate people morally than to bureaucratically push them around. Ultimately organisational culture will always reflect the complex interaction between the assumptions and theories that leaders bring to the group initially, and what the group learns subsequently from its own experiences (Schein, 1983).

And as Schein (2004) also stated:

One could argue that the only thing of real importance that leaders do is to create and manage culture, and that the unique talent of leaders is their ability to understand and work with culture. If one wishes to distinguish leadership from management or administration one can argue that leaders create and change cultures, while managers and administrators live with them. (p. 5)

It is in this sense, then, that leadership and culture are conceptually intertwined. In section two of this literature review Heads of Department and subcultures will

be briefly discussed, followed by a further exploration of secondary school Heads of Department leadership practices and processes in section three of the literature review.

2.2.6 Section Summary

There have been national culture studies and business organisational culture studies (for example IBM) but there is limited literature available on occupational cultures. As groups evolve over time they face two basic challenges; that of integrating individuals into an effective whole, and the requirement to adapt effectively to the external environment in order to survive. When solutions to these problems are found a group can engage in a form of collective learning that will create shared assumptions and beliefs, which is culture (Ehlers, 2009).

Schein (2004), Hesselbein (1999) and Smircich (1983) agree that organisational culture includes values, behaviours, norms and traditions. A different view is that culture is a system of common practices, symbols, and meanings which provide “the shared rules governing cognitive and affective aspects of membership in an organisation, and the means whereby they are shaped and expressed” (Kunda, 2006, p. 8). Practices may also be labelled conventions, customs, habits or traditions. An explanation for all these differing opinions could be that the literature rarely distinguishes between the values of leaders and those of the bulk of an organisation’s members. The values of leaders undoubtedly shape organisational cultures, but the way these cultures affect ordinary members is through shared practices. Leaders values become members practices (Geert Hofstede et al., 1990)

Probably the most basic distinction among writers on organisational culture exists between those who see culture as something an organisation *has*, and those who feel it is something an organisation *is*. The former leads to an analytic approach and a concern with change. It predominates among managers and management consultants. The latter supports a synthetic approach that appreciates the volatility and unpredictability of group progressions, and has a concern with understanding as expressed mainly by academics (Geert Hofstede et al., 2010). However all

agree that organisational cultures shape members' actions and interactions (English, 2005).

2.3 SECONDARY SCHOOL DEPARTMENTS – DO THEY CREATE SUBJECT SUBCULTURES?

Subcultures are groups within a culture whose members share many of the values of the culture, but also have some values that differ from it (Gudykunst, 2004; Schermerhorn, Hunt, Osborn, & Uhl-Bien, 2010). In secondary schools subcultures are created by subject specialism, and are easily evident as teaching departments (Siskin, 1991; Westoby, 1988). They provide the professional context within which teachers operate and relate to pupils and colleagues (Hargreaves, 1994). Researchers know that secondary school teachers identify themselves, and are identified, as subject specialists who co-exist in departments (Lortie, 1975; McLaughlin, 1987; Siskin, 1994). This departmental structure has shaped the development of strong department subcultures and has come to symbolise the overall culture of most secondary schools (Hannay & Ross, 1999). Lortie (1975) and Tyack (1974) describe how departments have become the key organisational unit in secondary schools with administration, information and knowledge being transmitted through them, further entrenching them as subcultures. The separation and development of subcultures has been reinforced in the majority of secondary schools as they have become larger, and the social world of teachers has splintered to where the department, rather than the school, effectively marks the bounds of 'major interactions' for most of them. Hargreaves (1994) described department subcultures as *balkanized*, meaning they have become fragmented into smaller regions that are often hostile or non-cooperative with each other.

Subject departments exhibit a powerful social relations function. They represent the primary point of reference, or professional home, for most teachers. Inevitably friendship groups develop within them in a collegial atmosphere where teachers spend time together and work cooperatively. Researchers for the Boyer (1983) study on secondary schools noted very little interaction across disciplinary

lines but reported that teachers found friendship and support within their departments. In this way the identification of secondary teachers with their subject communities tends to separate them, one group from another (Stoll, 1998). Conversely subject departments can also provide a structure where interpersonal rivalry occurs, and where conflict naturally arises. In this respect the informal and formal relationships between teachers can create disparate working cultures between and within schools (Harris, 2004).

A number of studies have confirmed the central role which subject subcultures play due to hierarchy of subject status. This is often based upon assumptions that so-called 'academic' and/or external examination subjects can be deemed more suitable for the 'able' students, whilst other subjects are deemed appropriate for the 'less able' (Geert Hofstede & Hofstede, 2005; Maassen, 1996; Schein, 2004; Westoby, 1988). This can cause various departments also to compete and clash.

2.3.1 The Head of Department and the Creation of Subcultures

Heads of Department are pivotal, as they work with and closely supervise the teachers of the department, and are responsible for all that the department does. They oversee teaching content and practices, relationships with students and parents, the way the department promotes its subject and, on a wider scale, the very nature of the teaching and learning itself (Allum, 2005). Heads of Department are uniquely placed within the school organisation to create a culture and a set of values within their separate departments (Harris, 2004). Traditionally Heads of Department have been seen as subject experts whose main duty was to develop the teaching and learning of the subject (Adey, 2000), however more recently they have extended their focus to cover managerial and administrative tasks and to see themselves primarily as leaders. Consequently, the style and nature of departmental leadership has become even more effectual because of its capacity for crucial and significant influence on the culture of a department with direct impact upon the quality of teaching within it (Adey, 2000).

As might be expected, departmental culture can vary considerably because of the differing personalities and priorities of those within it and the leadership style of the Head of Department. Some more recent research has focused upon the relationship between departmental culture and departmental performance, illustrating how the size, configuration and power base of departments in secondary schools influence the potential for development and change (Busher & Harris, 1999). This work has identified a range of organisational differentiation existing at the departmental level and has explored the micro-political tensions between departments.

2.3.2 The Influence of Secondary School Physical Structure on Subculture Development

Departments are often physically as well as organisationally separated. Siskin (1994) points out that the architectural design of secondary schools, where the campuses often have separate buildings to house different subjects, creates barriers to school-wide relationships and thus causes departments to be the most likely subgroups. Hargreaves (1994) discusses how cultures are formed within, and framed by, structures which encourage isolation, individualism and privatism. These physical structures can be helpful or harmful when they either bring teachers together or keep them apart. Similarly Earley and Fletcher-Campbell's (1989) research discussed how Heads of Department were aware of the danger of departments becoming isolated from the main staffroom but felt the advantages of gathering together outweighed the disadvantages.

Secondary school teachers whose office or resource spaces are communal within the department will have frequent casual contact with colleagues (Siskin, 1991). To observe and be observed in planning, and to share stories with and request help from whomever is gathered there; these are conditions that organisational theorists have long understood contribute to the formation and potency of subgroups.

Although during their teaching hours in classrooms teachers are usually isolated from other colleagues, psychologically they never are. Hargreaves (1994) discusses how the style and strategies they choose to adopt in their work are very

much affected by the outlooks of other team members and earlier teaching influences that have come their way. The relationships and motivational exchanges between departmental teachers possibly make the most significantly defining contributions educationally to their careers. Hargreaves believes that how teachers teach is closely related to influences outside their classrooms, gained through the connections and observed orientations of other collegial authorities.

2.3.3 External Subject Communities Influence on Subcultures

Although the secondary school environment clearly plays an important role in differentiating secondary school departments into subgroups, departmental teachers also identify themselves as members of a professional network with strong ties outside the school. Wenger (2000) argues that the success of a subculture depends on participating in broader learning systems - such as regional associations. Similarly Wilkins and Ouchi (1983) state that the specialisation of professional groups within a larger, for instance national organisation, is more likely to reinforce the development of effective culture. This is valid especially where members have frequent contact on similar problems, utilising shared professional orientations. Siskin (1991) reaffirmed this in his study when he noted the frequency of external references in participants conversations to such things as reports on conferences, anecdotes about teachers in other districts, and details about who contributed what to national policy. On matters of curriculum they repeatedly brought into the discussions information from outside the school. Frost and Durrant (2003) pointed out that the responsibility for balancing both internal and external support lies mainly with the Head of Department who must ensure that the department gains maximum benefit from partnerships and other external arrangements (p. 182).

2.3.4 Subjects Differences Reinforce Distinctive Subcultures

Secondary school subject teachers have varied ways of thinking, of looking at and understanding about their work situations (Siskin, 1994). There are several studies of the differing place values of secondary school subjects which have influence on teaching contexts (Harris, Jamieson, & Russ, 1995; Nash & Harker, 1998; Siskin, 1994). Although working in quite different research traditions and

with disparate foci, what these studies have in common is the observation that departments and their practices and effects vary much within schools. Just as individual school cultures vary according to their history, traditions, student mix and staffing, departmental cultures are highly idiosyncratic in terms of curriculum subject and workgroup relationships (O'Neill, 2000a). This implies that, in the same way as Principals are vital for establishing a 'whole school culture', Heads of Department fulfil a similarly important role in their smaller functional groups (Kerry, 2005).

School subjects have their own histories, pedagogical traditions, and status within secondary schools that contribute to departmental norms and policies. Recent studies show wide variation in the practices (content, pedagogy, evaluation) of different subject departments within schools with consequent effects for students and teachers (O'Neill, 2000a). Siskin (1991) combined a five month study of math and English departments and found that the different subjects effectively isolated their teachers into quite separate worlds. She discovered that English and mathematics departments both existed as relatively formalised administrative units that controlled independent resources, course offerings, and teaching assignments as well as maintaining separate and distinctive cultures and norms.

Departments have become institutionalised to the extent that we think we know them well. A case description for Boyer's (1983) study of secondary schools, for example, refers to generalised stereotypes about the character of departments that seem at least half true. For example biology and mathematics were seen to be more conservative than English and social studies. Hargreaves (1994) found similar results in the way physical education teachers evolve differently from mathematics teachers. These variations are responses by each department to their unique subject context because the problems they face are different. Research by McLaughlin and Talbert (2001) in the United States showed how departments have dramatically different effects on the motivation and career commitments of teachers. They noted that "when teachers from the English and social studies departments told us how they feel about their work, it was hard to believe that they teach at the same school" (p. 18). This could be further extended into the teaching of different age levels. For example kindergarten and other preschool

teachers evolve differently from teachers of adolescents because the problems they routinely face are dissimilar.

The subjects in secondary schools can be further divided into two groups: core and options. Core subjects are generally compulsory for students up to certain year levels and can have more time assigned in the timetable. They are generally English, mathematics, science, social science and physical education. Whatever the intentions, the teachers of the option subjects can feel marginalised by teachers in the core areas (Hargreaves, 1994), further enhancing the development of subcultures.

Most teachers identify closely with their subjects and can have limited experiences of teaching outside of it (Hargreaves, 1994). They therefore may develop pedagogical identities that are congruent with their subject. For example, historically mathematics education has had a strong focus on instruction, what to teach and how to assess what is being taught. According to their subject specialty, departments also speak distinct languages and use references in specialised ways (Siskin, 1994). They can invoke the names of leaders in their fields, describe incidents or tell jokes inaccessible to the wider public and be sure of being understood. Each draws on a separate knowledge base largely inaccessible to the uninitiated.

2.3.5 Section Summary

It is important to recognise that subject departments, although forming intimately interconnected subgroups within a secondary school, are not just smaller pieces of the same whole social environment. Neither are they only bureaucratic labels. They are worlds of their own with their own 'ethnocentric' way of looking at things. In secondary schools it is at the departmental level that the potential for collegial collaboration and the sharing of goals seems most possible. Departments then are fundamental units to consider in understanding the development and evolution of culture within a secondary school.

Hargreaves (1994) in his study of eight secondary schools in Ontario, Canada learnt that attempts to restructure subject departments in secondary schools can prove problematic. He found that those who tried to change the functioning of departments by supplementing rather than by substituting existing structures proved to be largely self-defeating. His findings also made evident that attempts to impose singular visions on the large, complex organisations that secondary schools are, can divide and blind rather than unite and enlighten.

Yet the reality of investigation into organisational culture that groups teachers by subject and supports that identification is that it has remained largely overlooked within research, precluding questions about internal differentiation and group formation. In spite of this accepted awareness that subject departmental subcultures exist within secondary schools, we remain comparatively ignorant about the processes through which they are created and evolve in particular localised settings (O'Neill, 2000b). This leads into the next section of this literature review – effective secondary school departments and their leadership.

2.4 SECONDARY SCHOOL DEPARTMENT LEADERSHIP PRACTICES AND PROCESSES

Over the years leadership in general has been studied extensively in various contexts spanning cultures, decades and theoretical beliefs. While there may be growing international literature, especially in England, centred on Heads of Department leadership in schools (Collier, Dinham, Brennan, Deece, & Mulford, 2002; Glover, Gleeson, Gough, & Johnson, 1998; Harris et al., 1995; O'Neill, 2000a), it is still relatively meagre compared with the wealth of research writing about principals (Bennett et al., 2003; Deal & Peterson, 2009; Deece, 2003; DuFour, 2002). There was acknowledgment that the role of Heads of Department involves, as well as the daily management of students, staff and courses, also 'big picture' thinking related to the future development of education generally, secondary schooling in particular, and how their subject area aligns with the changes (Rosenfeld, Ehrich, & Cranston, 2008). However depth to the research was limited and the literature search revealed mostly a selection of 'guide book'

style manuals on departmental leadership. Most were written by successful teaching practitioners in England and America during the 1990's. For example seminal author Marland (1971) drew on his experience as a Head of Department in several schools to be one of the first writers to identify the pivotal nature of the role. The evidence base for these works, however, was seldom made clear beyond personal experience (Rosenfeld et al., 2008), and there was little attempt in them to link with or be informed by available theoretical ideas.

Themes that emerged from the works published over the past two decades by Harris (2004), Fullan (2001), Harris et al. (1995), Sammons et al. (1997), Harris, Jamieson and Russ (1995), and Kerry (2005) identified the following practices and processes:

- Collegiate leadership with a consistent approach and high expectations.
- A shared vision of the subject effectively translated down to the level of the classroom.
- Team empowerment.
- A strong learner-centred focus with a syllabus matching the needs and abilities of pupils and academic focus.
- Effective communication.
- Collaborative working environment.
- Collegial Physical environment.

These first seven points relate directly to the Head of Department processes and practices and therefore have been further described below as they fit in directly with this study. The next five points related more generally to characteristics of effective departments and for the context of this study did not have to be elaborated on.

- Teacher professionalism. This included points such as high-quality teaching with clear routines and regular feedback, good organisation in terms of assessment, record keeping, homework, etc.
- Good resource management.
- An effective system for monitoring and evaluation.
- Opportunities for autonomous pupil learning.
- Parental support/involvement.

Dealing with school complexities requires that departmental leadership be based less on the positions, mandates and personalities of the leaders and more on ideas (Sergiovanni, 2001).

2.4.1 Collegial Department Leadership

Traditional notions of departmental leadership are where teachers focus is predominantly on classroom improvement. More recently secondary schools are being asked to become like high performing corporations, employing modern methods of leadership to decentralise authority (Hargreaves, 1994). This suggests that the old style ‘command and control’ leadership is no longer as effective (Harris, 2003), arguably because hierarchy is giving way to the idea of a ‘community’ of shared interests and stakeholders.

At its simplest, leadership is about achieving things with the support of others. At its most complicated, it is a description of behaviour that few might expect to emulate (Leigh & Maynard, 2010). Although research identified desirable traits, it was not possible to make consistent conclusions as to which ones of the desirable traits led to greatest results, and as Gergen (2009) from a constructionist standpoint discussed, none of the qualities attributed to good leaders stands on its own.

What was emphasised was the importance of integrating leadership with the administrative tasks of management (Southworth, 2002). Leadership ensures that the department will be going somewhere and can involve encouraging teachers to change (Maccoby, 2000). Cravens et al. (2007) define leadership as “the process of influencing others to achieve mutually agreed upon purposes” (p. 2).

Accordance with this kind of argument has seen increased advocacy for new styles of leadership that have been described as moral leadership, servant leadership and recently transformational leadership (DuFour, 2002; Freire, 1974; Schermerhorn et al., 2010).

Transformational leadership style “has been charged with forging organisational culture” (Aitken, 2007, p. 32) emphasising shared values. Transformational

leadership occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality (Putnam, 2002; Shields, 2009). Whereas members purposes may have originally been separate, they become fused for mutual support. This form of collegial leadership style emphasises the enhancement of teachers self-worth, and places a central value upon individual members of the department (Harris, 2001). Titles and descriptions for such leadership include words such as elevating, mobilising, inspiring, exalting, uplifting, exhorting and evangelising. Moralistic relationships evolve that raise the level of ethical aspirations and conduct, transforming not only the group members but their leader as well. He or she may in turn, through an ‘elevating’ relationship with the whole group, create more active members capable themselves of leadership (Putnam, 2002).

In all the departmental conceptions of leadership, the sharing of decision-making along collegial lines figures prominently. This involves a distributed form of leadership that engages all those within a department. Distributed leadership sees the teacher’s role expanding to beyond the classroom and is a focus of much of the learner-centred leadership literature (DuFour, 2002; Murphy et al., 2007). It implies that the context in which people work and learn together, constructing and refining meaning with the learner at the centre, leads to a shared purpose or set of goals for the whole (Leithwood, 2002).

Heads of Department then facilitate the link between the classroom, where the core business of schools is carried out, and the wider domain of national education. These relationships are mutually supportive, rather than dependent and subordinate (Kouzes & Posner, 2007). In productive work environments effective leaders are not bosses, they are supporters and providers. This newer form of leadership style unleashes much more energy, talent and commitment within the organisation (Leigh & Maynard, 2010).

This was discussed in the first section of the literature review where Schein (2004) discusses how leadership is intertwined with organisational culture to create a more effective organisation. Effective leaders are not only skilled at dealing with the everyday responsibilities needed to keep a department running,

but also with the world of needs, hopes, ideals and symbols (W. Davis & Gardner, 2004). They serve as models, enhancing the group's identity. They encapture and chronicle the group's shared meanings.

As Handy and Aitken (1986) have indicated, there is the perception that being a good teacher equates with being a good Head of Department, even though the jobs are quite different and require different viewpoints and additional or disparate skills and knowledge. Therefore the premise does not always hold true. New Heads of Department often start with a theory of how to develop effective culture within their department derived from a cultural paradigm in their heads. This may be based on experiences which have been influenced by their previous Heads of Department with whom they have worked or from knowledge acquired as a departmental member of staff (Schein, 1983; Turner, 2000).

2.4.2 Clear and Shared Sense of Philosophy and Vision

Studies of successful departments reveal that the department's philosophy may well be one of the most important ingredients for an effectively functioning formula. Sergiovanni (2001) concluded that building a philosophy within the department, while meeting expectations from the school and external sources, requires a broad-based commitment to the development of layered standards and accountability systems. Ehlers (2009) suggested that philosophy development needs to focus on incorporating new values and attitudes into teachers skills in order to have an impact on the teaching and learning processes. This has strong connections to Fullan's (2003) work on moral purpose.

A clear and shared vision by the department translates down to the level of the classroom and is a particularly important influence upon the quality of teaching and learning within it (Harris, 2004; Harris et al., 1995; Leigh & Maynard, 2010). Building a vision involves interaction with people within an organisation, and it has a futuristic orientation. Bennis and Nanus (2003) define vision as a better future for an organisation; Senge (2010) identifies building a shared vision as one of the widely quoted five disciplines of the learning organisation.

Vision strengthens teachers' sense of efficacy, enabling them to have confidence in their belief that they can improve the achievement of all their students irrespective of background. It builds motivation and bestows meaning.

Hargreaves (1994) reflects on how this is particularly strong for those who have participated in the development of the vision. Similarly, Lock and Strong (2010) when discussing social constructionism, explain how making meaning is inherently embedded into socio-cultural processes.

This may involve unravelling the past culture of a department to cast light on the beliefs, norms and systems that have been created or developed as the group has learned to cope with its adaption to external problems and internal integration (Schein, 1983; Sergiovanni, 2000). Harris, Jamieson and Russ (1995) state, for instance, that a climate for change is an important factor in becoming more effective, and a new Head of Department (without ties to a department's historical values) has the advantage of being able to create this climate more readily.

2.4.3 Team Empowerment, Commitment and Trust

The ability to build a team can be a significant attribute for departmental leadership. A study by Glover, Gleeson, Gouch, and Johnson (1998) undertaken in England with five of the staff of each of seven secondary schools, described the leadership of Heads of Department largely as responsibility shared around with emphasis placed upon developing people within the team (Harris, 2001). Heads of Departments are in a well-placed position to develop team leadership (Harris, 2004). They therefore have a vital role in building and sustaining a cohesive community in which all team members work collaboratively and collegially with a high degree of commitment (Putnam, 2002). The overriding attribute resulting from this is the development of learning communities which empower and commit teachers rather than have them working in isolation. As stated by Earley and Fletcher-Campbell (1989), feeling part of a team is something highly valued by the staff within effective departments. The study undertaken by Dinham, Brennan, Collier, Deece and Mulford (2000) found that Heads of Department overwhelmingly described their leadership in terms of team leadership. A quote is credited to the Chinese philosopher Lau Tzu that goes – “When the best leaders

work is done, the people say: We did it ourselves” (as cited in Yoder-Wise & Kowalski, 2006, p. 117). Harris (2009) stated that when Heads of Departments exhibited trust in their colleagues, most teachers in the department were able to be allocated particular responsibilities for which they took the lead on behalf of the whole department. Leaders can increase trust by promoting transparency and involvement (Bennis, Goleman, O’Toole, & Biederman, 2008; Daly & Chrispeels, 2008; Maccoby, 2000). A strong degree of trust and confidence in their group’s abilities enables Heads of Department to bring all members alongside with difficult decisions (Harris, 2009).

However, even if leaders know the correct course of action, unless the parties whose support is critical for implementation are committed to an idea, they may unwittingly sabotage it (Schein, 1983). Unfortunately despite the large number of studies on organisational commitment (Allen & Meyer, 1990), the influence of culture on members of an organisation’s commitment has received little attention. For example, the major review and meta-analysis by Mathieu (1990) on the antecedents, correlates and consequences of commitment did not include any reference to organisational culture or subculture. This is significant because influential organisational culture writers such as Deal and Kennedy (2000) and Peters and Waterman (1982) have suggested that organisational culture could exert a considerable influence in organisations, particularly in areas such as performance and commitment.

To inspire people to participate together as a team, they need to trust both the leader and themselves (Leigh & Maynard, 2010). Although trust has a long tradition in organisational research, only recently has the concept come to the fore in education research (Bryk & Schneider, 2002). Busher and Barker (2003) suggest that the core of effective departmental culture is trust between Heads of Department and teachers. A similar conclusion but from a contrasting view is offered by Houtte (2006) when it is discussed how when a personal feeling of distrust exists and, even more, faculty distrust, it evokes job dissatisfaction which may lead to lower performance, absenteeism, or even staff turnover.

2.4.4 The Learner at the Centre

The learner-centred approach to leadership has been developing for over five thousand years. Philosophers such as Pestalozzi, Hegel, Herbart and Froebel designed and popularised experience-based learner-centred curricula. The twentieth century Russian sociologist Vygotsky, Italian educational reformer Montessori, Swiss psychologist Piaget, and American philosopher and educator Dewey shaped the existing learner-centred education into a program now called constructivism where knowledge is constructed by learning. It is a concept of leadership where first and foremost the learner and learning is at the heart of the leadership purpose and teacher development. Parker (as cited in Henson, 2003) states this point clearly, “all effort should be centred on the child rather than on the subject matter” (p. 3). Effective leaders, therefore, spend less time solving problems and more time planning (Kohm, 2002).

A point can also be made that learner-centred leadership must promote professional development that is evidence-based and involves reflecting and analysing. It is a leadership quality that needs to be both managerial and inspirational. There is a clear expectation that as the educational landscape in which they work changes, so the pedagogical practices of teachers change with it (Kotzur, 2006). Effective departments have extensive staff development opportunities that emphasise the exchange of practical teaching techniques that make learning an integral part of a collaborative educational environment. Further, the role and effect of learner-centred leadership needs to be distributed. Spillane describes this as “practice distributed over leaders, followers and their situation, incorporating the activities of multiple groups of individuals” (as cited in Harris, 2004).

Schooling, however, is easily dominated by organisational, behavioural and motivational matters so that pedagogy for learning itself has the potential to become a small part. Frost (2004) talks about the realistic problem of time commitment, competing demands to complete other tasks and the increased effort required in learner centred teaching. He also makes the point that this, therefore, attracts the possibility for a greater risk of failure. Perkins (1993) lists a concern about the external imposition of targets for accountability testing, the narrowing

of the curriculum, and the fear of parental backlash as a constant challenge. There are also many reluctant scholars to somehow enthuse, given that going to school is largely a compulsory activity and not a personal choice.

2.4.5 Communication

Communication in this context refers to the style and extent of interaction among members of a department. Communication can take a variety of different forms but these may be divided into three main categories: verbal, written, and visual (Bell, 1992). The literature discusses how almost all communication is about action. It is about initiating action, preventing action, or giving or requesting information on which action may be based either now or in the future. The effectiveness of communication is often evaluated on whether or not action has taken place (Bell, 1992).

Marland (1971) stressed the importance of communication so that a team might be nurtured in a ‘climate of discussion’. Pettigrew (1979) discussed how one of the tests of a leader’s effectiveness may be how ‘effectively’ they communicate. It is one of the key processes by which identity is given to an organisation. Successful departments are comprised of colleagues who are constantly talking and listening to one another. Harris et al. (1995) describe how effective departments tend to be talking departments, i.e., departments that are marked by a constant interchange of professional information both at a formal and informal level.

Productive communication with a combination of top down and bottom up interaction, two-way flow of information and ideas, open feedback loops and a clearly delineated decision making process is of key importance to the successful development of effective culture (Ehlers, 2009). It increases connection between the various members of the department, which in turn increases their commitment to the team as a whole, and encourages action (Kotzur, 2006).

The Heads of Department’s foremost responsibility is to work closely with people rather than things. Marland (1971) for instance, observed that “people are the first call on a departmental Head’s time” (p. 26). He was at pains to point out how

necessary it is for a Head of Department to be accessible to other members of a department in break times. He identified the two-way responsibility they have to think of a school as a whole and teachers in their department as individuals within a single unit. Cravens et al. (2007) discuss the need for effective learning-centred leaders to involve everyone on an even more extensive scale arguing that communicating regularly, and through multiple channels, with families and community members is important. This may seem a lot to ask of people whose responsibilities already render time a scarce commodity.

Leaders talk becomes implicitly and explicitly connected to their actions, enabling role modelling and distinct cues about what is expected of group members (Aitken, 2007). Early and Fletcher-Campbell (1989) observed that department effectiveness was compromised if any staff in the department had responsibilities that lay outside of it as these people often had divided loyalties and therefore may at times be difficult to communicate with. For instance, if the Principal teaches a class it can be difficult for him or her to be present at some departmental meetings or planning opportunities since these meetings may conflict with other duties and appointments. In the matter of department meetings, research undertaken by Harris (2009) revealed that these have more effective results when they are frequent and have clear purpose. Kohm (2002) put it another way when he noted, “The less they met, the fewer reasons they could find to meet. As a result they failed to build the trust that they needed to discuss difficult issues honestly and fully” (p. 3).

Communication refers as well to the way members handle conflict. Several studies have explored how fragmentation and tension occur when changes breach established norms and values (Kezar & Eckel, 2002; Silver, 2003). There can be an appropriate place for conflict. When there is resistance it provides a chance to believe things could be better. It offers the hope of a more positive path. But in order to deal with resistance and toxicity, Heads of Department may have to risk the potential side effects that can result while going through the process. Bennett et al. (2003) make the point that effective departments have a community in which all its members are heard and taken into account with the resultant development of

effective relationships. Schein (1983) confirms that it is crucial to help members manage their own feelings of aggression or passivity.

2.4.6 Collaboration and Autonomy

Demands for various forms of collaboration have increased (Grossman & Stodolsky, 1996). The purpose of such collaboration is often to meet the needs of students, to plan curriculum, or to support professional development.

Understanding and appreciating the diversity of the department in terms of personality, motivation, cognitive style, gender, ethnicity, class, age, competency, and so on is necessary for successful collaboration (Brooks & Normore, 2010).

Equally teachers must be granted sufficient autonomy to be innovative and flourish free of excessive bureaucratic control and surveillance by subject leaders (Ghamrawi, 2010).

2.4.7 Collegial Physical Environments

Further to the literature in the previous section on the negative influence of segregated physical structures on a secondary school's subculture, development of the environment can also *foster* collegial interaction by creating professional environments that facilitate the work of teaching (Sergiovanni, 2000). This may involve a workroom space where teachers share a sense of purpose and community, receive recognition, and are treated with respect and dignity by others in the workplace (Shank, 2005). Marland (1971) acknowledged this when he observed that Heads of Departments had the "ability to create an appropriate departmental environment for the teachers by encouraging an atmosphere in which ideas are drawn out, fostered, and developed" (p. 4).

2.4.8 Section Summary

Research on secondary school department leadership processes and practices identified common characteristics such as; collegial leadership with clear and ambitious philosophy, vision and goals appropriate to the learner academic programmes, shared decision making and team empowerment as well as appropriate communication and physical environment. Through these processes and practices Heads of Department are able to connect people to each other, to

their work, and to their responsibilities.

While conducting the literature review of secondary school department leadership some gaps became obvious. Firstly, a major finding by Ghamrawi (2010) and Deece (2003) highlighted the shortage of time with which Heads of Department were allotted to fulfill their role. The literature reinforces that time must be given for collaboration, but little has been discussed anywhere about how to realistically achieve this in today's schools. Is the theory able to be put into practice? Secondly, research on trust in education settings is still in its infancy (Houtte, 2006). Research at the department level considering trust in colleagues was even more limited. And thirdly, one particular aspect I, in my researcher role, anticipated finding within the literature was discussion concerning the moving onwards and upwards of struggling students where a mismatch of ability and year level could create boredom and frustration. However there is minimal literature regarding the Head of Department's role on this subject, despite 'syllabus matching the needs and abilities of pupils' being a criterion for Heads of Department leadership in the 'guide books'. Finally what seems to be missing from the research generally is an in-depth understanding of the organisational culture that makes up the contexts that guide assumptions about everyday practice.

2.5 CHAPTER CONCLUSION

Schein (2004) states that "neither culture nor leadership, when one examines each closely, can really be understood by itself" (p. 5). This review of the international literature on organisational culture, subcultures that secondary school departments create, and secondary school department leadership, has highlighted that there is limited literature available on the consideration of the crucial relationship in secondary schools between Head of Department leadership and departmental culture. Information on and the New Zealand experience is even more limited. Literature that does exist focuses primarily on leadership styles and administrative roles that are handled by the Head of Department, downplaying the crucial factor of organisational organisational culture. As Wright (2002) states, "the reality is that a Head of Department has a complex and highly people-centred job" (p. 141). O'Neill (2000a) agrees when suggesting that consideration of each leader of

department's context yields valuable insights into their behaviour, which are ignored each time researchers focus on more generic aspects of Head of Department practice.

It has been suggested that unravelling the culture of a department will cast light on how teachers understand and engage with notions of collegiality and collaborative leadership. Departmental culture is understood as that manifestation of the relationships which exist both between the people in a subject department and between that group of people and the institutional and socio-political contexts that they are immersed in (Harris, 2004). It is constructed through the interactions of a group of people both with each other and with others outside the group.

Departmental cultures represent the views, values, and beliefs of teachers and support staff about what it means to teach students in particular departments within institutional contexts. These cultures may be collegial, autocratic, or corporate and demonstrate authentic and contrived collegiality (Hargreaves, 1994).

CHAPTER THREE: RESEARCH METHODS

*Culture is hard to define, hard to analyse and measure, and hard to manage
(Schein, 2004).*

3.1 INTRODUCTION

This chapter begins by investigating the term ‘educational research’ and the most significant paradigms and corresponding methodologies that position researchers well to create and validate evidence. Then the approach undertaken to investigate ‘how heads of mathematics faculties develop and evolve effective culture within their departments’ is discussed, followed by the issues of representation and quality, and ethical considerations for this research. Finally, I discuss the process of gathering data and its analysis.

3.2 EDUCATIONAL RESEARCH AND PARADIGMS

Education is an extensive area of study and there are many types of research activity within it, but all aim to add knowledge (Mutch, 2005). Educational research is often applied rather than theoretical, because it arises in response to the needs defined by an institutional arena rather than emerging from a particular theoretical paradigm. Educational research is often driven by a desire for social improvement and the promotion of social justice (Burton & Bartlett, 2009). It helps inform policy debates and offers insights that can help weigh various perspectives (Nisbet, 2005). As Husen (1997) states, the general purpose of knowledge arrived at in educational research is to provide a basis for action.

The researcher’s individual position will influence how research is approached. For instance Burton and Bartlett (2009) state that a researcher will have a position on ontology, which is the understanding they bring to the research of how their world exists, and also epistemology, which is how claims are justified and what counts as truth. This can mean that researchers may construct competing explanations on the basis of the same set of data because they will inevitably

frame their investigations in fundamentally different ways (Donmoyer, 2006; Rist, 1977; Wiliam, 2008). This research began with a consideration of *what* we want to know before any determination of *ways* of knowing it. Hence for this research (which has a very human aspect), where the philosophical questions of ontology and epistemology are investigated within a human behavioural framework, there was also the consideration that the researcher and intended audience would primarily be Principals and secondary school Department Leaders. Their subject discipline of mathematics implies that their experience and reasoning regarding research originates from a scientific background, which could influence their ontological and epistemological views (Heshusius, 1994). In consideration of this I, as the researcher, had to first become aware of my own personal preferences and related values from my mathematics subject discipline background. In order to let go of prior assumptions and develop the intent and expectations for this research it was important to establish which paradigm was most appropriate to use.

A paradigm describes the overall approach to any particular piece of research and controls the choice of tools used to collect and analyse data (Kuhn, 1996; Mackenzie & Knipe, 2006). Educational research presents two main contrasting notions of paradigms, positivist (scientific) and interpretive (human behaviour). The growth of interpretive research in educational contexts reflects a shift, as Hargreaves (1994) puts it, from ‘scientific certainty’ to ‘situated certainty’ where greater attention is paid to the various ways in which teachers conceptualise, experience and organise their social worlds. Therefore, it was important to examine briefly the uses, strengths and weaknesses of both notions to justify the approach used in this study.

Looking first at the positivist paradigm, which is the more established view, where human behaviour is discovered and determined by observing it first-hand, for example by seeing or hearing (Husen, 1997). It assumes that clear cause and effect relationships can be established while scrutinising human behaviour. Pierce (2007) suggests that the positivist position rests on a scientific epistemological foundation, and that valid and reliable knowledge can only be generated by developing and testing hypotheses. To achieve this the positivist paradigm makes

use of quantitative data collection and analysis such as surveys, observation, experimenting on or interviewing a large number of subjects, resulting in the gathering of numerical data in which findings can be statistically analysed and therefore are believed to be generalizable (Basit, 2010; Cohen, Manion, & Morrison, 2007). Quantitative methodology claims researcher objectivity and freedom from bias (Burns, 2000). However quantitative research has been criticised for not recognising the value of the opinions of participants (Creswell, 2008). In this respect it has been argued by Dyson and Todd (2010) that in education research, relationships are too complex to be explained through straightforward numerical data.

This led me to the interpretive paradigm, which is the view that human behaviour can only be described and explained by individuals in the way it has been perceived by them (Basit, 2010; Mutch, 2005). The interpretive paradigm favours qualitative data collection methods and analysis which focuses on smaller numbers, and in-depth analyses of relationships, experiences and perceptions of people with a greater emphasis on holistic description. That is, it describes in detail what happens in a specific situation (Burns, 2000; Cohen et al., 2007; Denzin & Lincoln, 2005). The purpose of this kind of inquiry is to achieve *depth* rather than *breadth*. It asks questions about 'how' and 'why' that are often overlooked by quantitative research which is more focused on 'how much', and acknowledging differences as well as similarities to try and make sense of social reality (LaPier & Scherer, 2001). Approaches to qualitative methodology include case studies, ethnography, action research and life history or narrative. This methodology does not claim to produce findings that are generalisable, though the research can be replicable and transferable to other similar contexts (Cohen et al., 2007).

More recently, in addition to these two main notions, education research has focused on the critical theory paradigm. Critical research aims to empower those who are facing inequality and discrimination (Basit, 2010). Critical theory is a blanket term denoting a set of several alternative paradigms, for example, Critical Race Theory and Feminist Research (Guba & Lincoln, 1989). The purpose is not merely to interpret and report on a social situation, but to change it for the benefit

of society. The critical theory paradigm allows for the application of both qualitative and quantitative research methods (Mackenzie & Knipe, 2006). Critical theory is understood to prescribe what a society should comprise of and how individuals should behave. A diverse range of tools is encouraged, particularly to avoid discrimination.

Qualitative and quantitative methodologies may appear (and are) quite different, their ultimate purpose is the same: to facilitate the advancement of knowledge. Both have strengths and weaknesses within research and therefore context counts. Johnson and Onwuegbuzie (2004) advocate that the system which is chosen should depend upon the type of information sought but that neither should be seen as superior. Educational research approaches have become more complex in design with flexibility in the methods of data collection and analysis. Mixed methods have become more acceptable and common since no one methodology can answer all questions and provide insights on all issues (Burns, 2000; Mackenzie & Knipe, 2006). Creswell (2008) states that the method a researcher employs is determined by the following three criteria: the research problem, the personal experiences of the researcher, and the audience(s) for whom the report will be written.

3.3 METHOD FOR THIS RESEARCH

An interpretivist framework which draws on constructivist grounded theory is appropriate for this research. Grounded theory refers to the process of developing theory through analysis, rather than using analysis to test pre-formulated theories (Gibson & Brown, 2009). Most constructivist grounded theory studies rely on detailed qualitative materials collected through field, or ethnographic research, but they are not ethnographies in the sense of total immersion into specific communities (Lutterell, 2010). Nor do grounded theorists attempt to study the social structures of whole communities. Instead, they tend to look at slices of social life. When learning and understanding about organisational culture, researchers discuss, listen, examine and hear meaning from what participants have learned through experience (Basit, 2010; H. Rubin & Rubin, 2005). Heads of Department are constantly seeking 'best' practice, and the interpretivist approach

allows us to serve that purpose by capturing insights (Eisenhart, 1998). This contrasts with research around educational leadership and management which is sometimes expressed in terms of ‘scientific certainty’ using generic management competencies or abstract characteristics of school effectiveness (O’Neill, 2000a).

The aim of this research was to give voice to the experiences of mathematics Heads of Department which led to a qualitative methodology using brief multiple case studies to address the research of ‘a consideration of processes by which mathematics heads of department develop effective culture within their departments.’ An educational case study is where researchers are concerned neither with social theory nor with evaluative judgement, but rather with the understanding of educational action. They are concerned with enriching the thinking and discourse of educators either by the development of educational theory or by refinement of prudence through the systematic and reflective documentation of evidence (Bassey, 1999). The methods employed in this research included a review of the literature, a series of semi-structured interviews geared to discover shared underlying assumptions within the department, and document analysis.

3.4 ISSUES OF REPRESENTATION AND QUALITY

One of the complications of educational research is that education itself is fluid and highly contextual. Therefore new knowledge has to be constructed on constantly changing foundations (Berliner, 2002). Under such circumstances it can be difficult to establish valid and reliable causal claims that can be extended beyond the time, place and people involved and, as a result, research in education tends to be heavily qualified (Burton & Bartlett, 2009).

Validity which is a strength in qualitative research (Scherer & LaPier, 2001) is the revealing of truth, and exists when the research has described the issue or focus and the conclusions made are authentic (Burns, 2000). The following issues must be met in order to achieve this: relevance is important; ensuring that the interviewees fit the purpose for the research; and that the researcher asks the right questions (Bassey, 1999). Hence the interviewees were Heads of Mathematics

Departments within New Zealand secondary schools who were randomly selected from a list recommended by the New Zealand Mathematics Advisors. Validity also ensures that all known biases of both the researcher and participants have been acknowledged so that scrutiny by others can be defended (Cohen et al., 2007).

One important aspect of a qualitative study is that the researcher plays a major part in collecting and interpreting data. This can be complicated because researchers themselves are strongly shaped by the nature of their knowledge and experience (Labaree, 2003). Undertaking this research, the position of myself as an insider within the mathematics field, as well as being in a middle management role, meant that the use of a field journal was important for reflection and the questioning of assumptions about values, ideas, knowledge, motivation and prejudices that could affect how the research was to be done and why. A benefit, however, of coming from within a part of the community being researched meant that trust and rapport were able to be developed more rapidly, and hierarchy in the researcher-participant relationship was minimised (Heshusius, 1994). I was aware though, as Wragg (1978) comments, that while establishing rapport is important during interviews, it was also important that this relationship did not develop to the extent where the participant may only want to please the interviewer.

The concept of reliability concerns the ability to get the same results with repeated testing. However with qualitative research the context of the research means it is usually unlikely that results would be replicated in another study as the research relates to an individual's understanding of a given situation at a given time. Also when conducting research through case studies this can be problematic as the case chosen may not be a 'typical' example (Bassegy, 1999). Stenbacka (2001) states that reliability is not only inappropriate to qualitative research but that making it a criterion of a study would invalidate that study. As an alternative Lincoln and Guba (1985) put forward the concept of trustworthiness in naturalistic inquiry.

Lincoln and Guba (1985) suggest that trustworthiness is defined as the presence of credibility, confirmability, dependability and transferability. Credibility is whether what is described by the researcher matches the reality experienced by

the participants (Creswell, 2008). Confirmability measures how well the research findings are supported by the research data (Lincoln & Guba, 1985).

Dependability is whether the scenarios recorded by the researcher are the usual pattern in that situation (Cohen et al., 2007). Transferability means the research needs to be sufficiently detailed so that the audience can determine the extent to which findings from an individual research project are generalizable to another situation and can be transferred to another context (Basit, 2010).

Credibility was achieved through a comprehensive literature review, providing background and support for the study and ensuring that the evaluation of the findings was based entirely on the data collected during the field research.

Confirmability was achieved by ensuring that transcripts from the interviews were returned to the participants for review during the research process. Dependability was gained by triangulation which means approaching the research from as many different angles and perspectives as possible in order to gain a greater understanding (Burton & Bartlett, 2009; Thurmond, 2001). Each paradigm employs triangulation in slightly different ways and the interpretivist uses different sources of data to give greater depth to his/her analysis, corroborating or leading to a discussion of any variation in the findings (Drew, Hardman, & Hosp, 2008; Griffiee, 2005). Within this research, comparison was made against documentation collected through artifacts such as department handbooks and minutes of meetings. Also during each interview everything said was not taken at face value, but questions were repeated in slightly different ways to check the validity of what the interviewees said (Drew et al., 2008; Griffiee, 2005; Kvale & Brinkmann, 2009). Finally, transferability was maintained by describing in depth the context, issues and themes of each participant's responses, without giving away the names and identity of participants. The terms credibility, confirmability, dependability and transferability replace the usual positivist criteria of internal and external validity, reliability and objectivity (Denzin & Lincoln, 2005, p. 24).

3.5 ETHICAL CONSIDERATIONS

Ethics in research involves the principles of right and wrong accepted by a particular group at a particular time (Bogdan & Biklen, 2007). This research

adhered to the ethical procedures in accordance with the Waikato University's Research Code of Ethics (University of Waikato, 2007) regulated by the University's Research Ethics Committee. The principles of ethics in research are: informed consent, right to withdraw, permission, confidentiality, anonymity, privacy, participant safety, researcher safety, and dissemination while avoiding any coercion and deception (Mutch, 2005). Considerations that were of particular note were selection of participants, privacy and social issues.

3.5.1 Procedure for the selection of the participants

Although this research involving only five case studies was small in scale, participants were chosen with great care. At the outset I asked each of the ten New Zealand secondary school mathematics advisors to recommend up to four mathematics departments that they considered to have an effective culture (as described below). I sought their recommendations because advisors are regularly in secondary schools and have a national view. This provided rigour to the selection process and ensured that I did not favour schools within my own district. A letter was sent to the mathematics advisors (see Appendix A, p. 116) in which they were asked to consider departments that exhibit cultures of openness and trust which reflect elements such as:

- a clear and shared vision translating down to the level of the classroom,
- high levels of trust,
- productive communication with a combination of top-down and bottom-up interaction/collaboration,
- low staff turnover and absenteeism,
- commitment to professional growth programmes with a focus on seeking new and better ways of engaging students in learning.

At this point, after discussion with the Canterbury Mathematics Advisor and the research supervisors, a decision was made not to include schools from the Canterbury region. This was due to the extremely high level of stress and anxiety that teachers and leaders of departments were experiencing as a result of the continuing earthquakes, dealing with site sharing for schools, damaged homes, and students who had lost homes or family members.

From the 33 departments recommended by the maths advisors, the list was shortened to co-educational state schools of between 700 and 1800 students in size, with the head of the mathematics department having held that position for no less than four years. From these remaining 17 schools, five were randomly selected to participate. The random selection was conducted by first assigning each school (listed alphabetically) a two digit number from 00 to 17, then random numbers were generated using a calculator until five schools were selected, ignoring numbers out of the range and repeats. Letters of invitation and an information sheet were sent out to the Head of the Mathematics Department (see Appendices B and C, p. 118 and 120) and the Principal of the school (see Appendix D, p. 124). These documents outlined the research intentions, procedures and expectations of the participants as well as the possible benefits and drawbacks. Following the letters, telephone calls were made to the participants to confirm their consent to participate. Contact was also made through emails. Participants were given the opportunity to discuss their participation with me prior to giving consent to participation so that they would not feel they were coerced (Burns, 2000; Tolich, 2001). If the Principal or Head of Department declined to be involved, another department was randomly selected from the advisors' recommended list.

The following table summarises the key facts for the schools selected.

| School | Size of School | HOD | Years as HOD in this School | Total number of teachers | Full-time teachers | Part-time teachers |
|---------|----------------|-------|-----------------------------|--------------------------|--------------------|--------------------|
| Alpha | 700 | Anna | 2 | 7 | 5 | 2 |
| Beta | 700 | Beth | 13 | 6 | 4 | 2 |
| Gamma | 800 | Greg | 3 | 7 | 7 | 0 |
| Delta | 1400 | Debra | 20 | 16 | 8 | 8 |
| Epsilon | 1700 | Eric | 10 | 20 | 15 | 5 |

Table 1: Summarised details for schools participating in the research

Note: Anna and Greg had been Head of Department in this particular school for less than four years, but still fit into the selection criteria as Anna had been a Head

of Department in a previous school and Greg had previous leadership experience as a Deputy Principal.

3.5.2 The right to privacy through confidentiality

The right to privacy was paramount in this research (Cohen et al., 2007). As discussed by Davidson and Tolich (2003), New Zealand can be considered a small town environment, and a consideration of the small size of the secondary school mathematics educational community in New Zealand allowed the possibility for people to identify schools and individual participants. The use of pseudonyms was therefore central to the ethical consideration. Alphabetical names were chosen as participant pseudonyms and assigned in the order in which they were interviewed. Both the female and male gender have been used, and the reader must proceed on the basis that the assignation of gender has been random.

It was necessary to show that not only was there interest in getting Heads of Departments' stories, but that their privacy was paramount. Therefore, trust had to be established between me and the participants. One way this was achieved was by stating in the introductory participation sheet that any information collected from participants would be solely for the purposes of the thesis and any subsequent publications or conference seminars (see Appendix C, p. 120). To ascertain their understanding and to consolidate the trust that was beginning to be established with participants prior to beginning the interviews, they were verbally reassured of the intentions concerning the data collected and the respect for their privacy and confidentiality.

3.5.3 Social and cultural issues

It was vital that rapport was developed with the participating Heads of Department in order to gain a deeper understanding of their life experiences. Therefore the importance of reciprocity, which is broadly defined as the give-and-take of experiences within a researcher/participant relationship where sharing is part of the process, was considered (Arksey & Knight, 1999; Basit, 2010). Not wanting to influence the interviewee's responses during the interviews, reciprocity

for this research consisted of sending each participant a thank you gift package once the first draft was complete.

3.6 DATA COLLECTION METHODS

Broad movements in philosophy emphasise key aspects of knowledge relevant to interview research, the phenomenological descriptions of consciousness and of the ‘life-world’, the hermeneutic interpretations of the meaning of texts, and the postmodern emphasis on the social construction of knowledge (Kvale & Brinkmann, 2009; Lock & Strong, 2010). These all have in common the rejection of methodological positivism that confines evidence to quantifiable facts. As the objective of the research was to examine the Head of the Mathematics Department’s perceptions through an interpretive framework, data was collected primarily through in-depth semi-structured interviews. As Quinn states “the things people say offer the fullest and most decipherable record available” (as cited in Lutterell, 2010, p. 239). In addition forms of artifacts were collected and where appropriate supplemented by field notes.

3.6.1 The interview

Interviewing is a technique that enables the researcher to understand the experiences of other people and to develop an awareness of the meaning(s) they make of those experiences (H. Rubin & Rubin, 2005). This understanding comes by allowing researchers access to people’s ideas, thoughts and memories in their own words, rather than in the words of the researcher (Reinharz, 1992). These particular research interviews constituted a professional conversation based on daily life where knowledge was constructed through the interaction between the interviewer and the interviewee (Kvale & Brinkmann, 2009).

In order to allow for individual differences and the diversity of experiences, the interviews were semi-structured which gave me opportunities to explore ideas and issues not anticipated in the original plan, as well as following up on answers given during the interview in order to elicit depth and detail about the research

topic. Furthermore, semi-structured interviewing allowed time for me to take notes and construct emerging meanings of interviewees' lived experiences.

A set of open-ended guiding questions were used as a framework to guide the interviews (see Appendix F, p. 127). These interview questions were developed before the interviews took place and emerged largely from the research question and literature review. Using open-ended questions rather than closed questions facilitated interaction and the sharing of participants' perceptions, feelings and beliefs (H. Rubin & Rubin, 2005).

Interviews were negotiated with each individual Head of Department, taking into account such factors as other planned school activities, teacher conferences, and assessment periods. All interviews were conducted in a place decided by the interviewee and were audio digitally recorded so that I was able to review them multiple times. This made it possible to search for subtle nuances as the transcription of qualitative data is not an easy task and can be distorted when writing it down (Cohen et al., 2007). Not only are the words in the conversation important to note, but the expressions and feelings of the person involved are also important in the attempt to construct meaning from their real life experiences (Burns, 2000). The use of the field notes helped with this aspect. Transcripts were returned to each interviewee for participant checking before being analysed as data.

After conducting the first two interviews a meeting was held with the supervisors of this research to discuss how the data gathering was progressing and to reflect on how the data may be used to take the research forward.

3.6.2 Artifacts

Document analysis formed a minor but significant part of this research. Gathering data from separate, yet overlapping angles made the research more robust. Schein (2004) discusses how the only safe approach to deciphering effective culture within a department is to cross check each piece of information obtained against all other information until a pattern finally begins to reveal itself. To affect this

cross checking, appropriate documents were gathered and analysed such as the department handbooks and minutes of meetings and the school prospectus. Reinharz (1992) states that documents and artifacts possess a naturalistic quality because they are not produced for the purposes of research, nor are they affected by the process of being studied.

3.6.3 Research Journal/Field Notes

This method of data collection was a valuable tool as a basic reflexive resource which followed the step-by-step process of the research. Entries were random and the rationale for them was to provide a forum for planning, reflections and biases which gave valuable insights during the process of conducting this research.

3.7 DATA ANALYSIS STRATEGIES

Qualitative analysis is not about mere counting or providing numeric summaries. Instead, it is a process of organising and understanding what the participants have said in the search for general statements about relationships and underlying themes (Mutch, 2005). One of the particular strengths of qualitative research is its capacity to identify the unexpected (Cohen et al., 2007). The objective is to discover variation, portray shades of meaning, and examine complexity. Through the analysis there was a danger that the context of the five case studies would become lost through fragmentation. To overcome this, a thumbnail sketch of each of the five departments was provided in the introduction to portray their organisational context.

To develop the conclusions to this study, constant comparison of interview coding, artefact analysis and field notes were used until data saturation was achieved. The goals of the analysis are to reflect the complexity of human interaction by portraying it in the words of the interviewees and through actual events and to make that complexity accessible to others (H. Rubin & Rubin, 2005). One of the major difficulties in describing the effective culture of the mathematics departments is that culture is a holistic phenomenon. All of the various components are interrelated and bound into a whole. This did not

preclude the separating out of the various components, but it is acknowledged that the separate components which emerged are intellectual constructs of the researcher and participants (Gergen, 2009).

3.7.1 The Interviews

The type of data analysis strategy used in this study was thematic coding, which is commonly used by qualitative researchers (Burns, 2000). It involves examining all the interviews together to pull out coherent and consistent descriptions, themes, and theories (H. Rubin & Rubin, 2005). To seek participants' meanings, analysis needed to go further than surface meanings or presumed meanings to look for views and values as well as for acts and facts. By studying tacit meanings it was possible to clarify rather than challenge participant's views about reality (Lutterell, 2010).

The research findings and analysis includes similarities, differences, and unique information supported by quotations and specific evidence. Creswell (2008) notes that the findings of qualitative research are chiefly reported as a narrative discussion in which authors present an in-depth précis of the data analysis. Quotes directly from participants add richness, as do vivid detail, tension and contradictions, and analogies. In a case study the sample is small, therefore the frequency of a theme occurring is not a determinant of whether that theme is significant (Cohen et al., 2007). Furthermore, single comment may reflect a highly significant concept, insight or event.

Three of the interviews were conducted in the schools at a time that suited participants. Being in the department environment provided the interviewer with an introduction to the local language, the daily routines, and the power structures, and so provided a sense of what the interviewees would be talking about (Kvale & Brinkmann, 2009). The other two interviews were held during the school holidays so were at a location of the Heads of Departments' choice.

3.7.2 The Artifacts

It was ensured that all artifacts gathered were written within the past year and that the current Head of Department was the author. The artifacts were analysed after the interviews and used to help establish consistency between what was said in the interviews and what was written in the artifacts.

3.8 CHAPTER CONCLUSION

This chapter presents the approach used to undertake this research including the considerations of representation and quality, and ethical procedures. It involved five mathematics Heads of Department who participated in the semi-structured interviews. The participants came from various co-educational secondary schools within New Zealand. The data collected from the interviews was analysed using thematic coding. Throughout the data analysis I constantly reflected and challenged assumptions. The imperatives for this research were that the findings generated would be of value, and assist current and future mathematics Heads of Departments to reflect on the role of developing effective culture. These findings are presented in the next chapter.

CHAPTER FOUR: RESEARCH FINDINGS

The aim of methods that involve asking direct questions to research participants (such as interviews) is to create analytically focused discourse that provides insights into specified research questions (Gibson & Brown, 2009, p. 86).

4.1 INTRODUCTION

The intent of this chapter is to present the findings from the five case studies by documenting each participant's journey towards the development and evolution of an effective culture within their department. Some of the findings here have parallels within the academic literature, but the opinions expressed are entirely the professional experiences of the Heads of Department. Diversity in personal background, as well as in school and community context, means that each case study is unique. It is necessary therefore to give a brief description of the mathematic departments and their schools to help give voice to the research participants. For a table summarising the key facts of the schools see page 44. To protect confidentiality, the names of the Heads of Departments, schools, and communities who impacted on these leaders' experiences have been given pseudonyms.

Following case study profiles, the research findings have been synthesised into themes under the two major headings: 'developing effective departmental culture' and 'evolving effective departmental culture'. These will include data such as direct quotes from participants, general descriptions that comment as to whether the information offered is typical or atypical of the data, and interpretive commentary that may precede or follow these elements. The interpretive commentary performs several functions: it surrounds the raw data and "guide[s] the reader to see the analytic type of which the instance is an example," (Erickson, 1985, p. 152), it focuses attention upon the meaning-interpretations of the author, it draws attention to deeper levels of meaning that may be overlooked by a

cursory reading of the text, and it provides additional information to help contextualise the data.

4.2 CASE STUDY PROFILES

All schools were co-educational and ranged in size between 700 and 1800 students. The first school, **Alpha**, was a city school of approximately 700 students and has been capped at this number so there are no growth opportunities. It is an old school with a recognised history and serves a wide socio-economic area and had a decile² ranking of eight. Anna had been the Head of Department at this school for two years. She had a background of teaching more than one subject, and had previously been a Head of Department in a different subject. Anna was still shaping the department as she discovered when she first arrived that the seven teachers within the department were operating in isolation from one another. A notable feature of this department was that mathematics was compulsory up to and including Year 12 which is unusual for a New Zealand secondary school where maths is generally an option at Year 12.

The next school, **Beta**, was of similar size with 700 students and a decile ranking of three. It was based in a satellite town. The school was multi-cultural with a large number of Polynesian students. The Head of Department, Beth, had been there for 13 years with a settled staff of six. One characteristic that stood out for this department was that there was a large number of non-specialist staff without formal training in mathematics but who had been identified by the Head of Department as having good teaching abilities. With guidance they developed the necessary skills and progressed into the role of mathematics teaching. The department were constantly engaged in professional development and were appropriately competitive as they searched for opportunities to extend their teaching skills.

² A school's decile rating reflects the average family backgrounds of students in the school. There are ten deciles and around 10% of schools are in each decile. Decile one schools have the highest proportion of students from low socio-economic backgrounds whereas decile ten schools have the highest proportion of students from high socio-economic backgrounds.

Gamma was a large decile four secondary school with approximately 800 students in a city location. Greg had been teaching at the school for over 20 years, holding the role of Head of Department for the last three with seven full time department members. Prior to this role he had been in the school's Senior Leadership Team. The structure of the Senior Leadership Team was unique. Previously they employed two Co-Principals and a Deputy Principal and then rotated three Senior Leadership Team people who were internally elected for a three-year fixed term position. However the school culture was on the cusp of change following the recent appointment of a new Principal. There was a strong 'whole school' culture which was so successful that the mathematics departmental culture replicated this with no obvious distinction between the two. Greg's perception of the whole school culture was one of being quite liberal and a school that values the individual more than the collective. This appreciation of the culture operating in the school had attracted Greg to apply for the position of Head of Department. The mathematics department structure and people within it had not changed significantly for many years.

Delta High School was in a rural setting with 1400 students and a decile ranking of seven. It is the only secondary school in the region and because it is a country school the students are out of class a lot for extracurricular activities which have to happen during school time because of the students' reliance on school buses. Debra had taught in the school most of her career and had been in the position of Head of Department for over two decades. Debra was thinking about when would be a suitable time to step back from leadership but there were too many possibilities to consider that right now. The department consisted of 16 teachers including the teachers of Years 7 and 8 who were also maths specialists. Many of the teachers taught in two subject areas.

The final school, **Epsilon**, was a large decile five city school of approximately 1700 students. Eric had been a mathematics Head of Department for 20 years, 10 of them at this school. He had previously taught in Epsilon as an assistant teacher but had moved away to take up his first Head of Department job. The teachers within the school were quite diverse with five part-timer staff and three who taught in other subject areas. There are also two Deputy Principals who teach

maths and a few maths teachers that teach in other subject areas. There was quite a change-over of staff a few years ago, but since then it has remained stable. This has created a mix of long term teachers and new people who are coming in. Eric particularly noted that the department had several teachers from England who have been through some of the new approaches to teaching mathematics that are currently being implemented in New Zealand. This had helped to move things along quickly in terms of what the department wanted to do and where the department wanted to develop.

4.3 MAKING A START – THE DEVELOPMENT OF EFFECTIVE DEPARTMENTAL CULTURE

This section uses the data collected during the semi-structured interviews to look at how the Heads of Department developed effective culture. At the outset participants were invited to describe their department's culture. At this initial stage of the interviews responses were hesitant and at the surface level of observable behaviour, emphasising communication and collegiality. Anna said her colleagues frequently sat and talked together, "so we are all working from the same page." Beth stated, "I have strong members in my department... they are passionate and really want to learn about teaching and helping students move forward in terms of mathematics." Greg said, "we are very collegial" and Debra similarly remarked that, "they are all really friendly and are willing workers." Eric commented that his group were, "enthusiastic and keen on working together." It was evident that the Heads of Department had not consciously thought about developing an effective culture within their departments, and it was not until further into each interview that the underlying assumptions and unconscious taken-for-granted beliefs began to be uncovered.

4.3.1 Assessing and Initial Shaping of the Departmental Culture

Two of the Heads of Department had been appointed within recent years, (both had previous leadership experience), and were able to reflect on how they spent time undertaking an assessment of the culture existing prior to their appointment. Previous to Anna's appointment she observed areas that were lacking and found

that there were changes that needed to take place. During her first school visit she looked into classrooms to evaluate evidence of student work and asked direct questions about the teachers working within each classroom. When this process was described during the interviews, it became clear that her thinking and planning as she developed an overall strategy involved transforming the departmental culture to be more effective. This time was described by Anna as “shaping the department.”

In contrast it was a markedly different beginning for the other recently appointed Head of Department, Greg. He was internally promoted and chose to continue with the existing culture. “I don’t think I have changed anything remarkably. I’ve just carried on like previous Heads of Department.” He stated that this was because of the strength of the whole school culture.

I think when I first came all the teachers who applied to the school did so because they knew of the school, knew what it was like, and were coming here for that reason. Also the people appointing them saw that they would fit into the school. So the department has had this strong family orientation for three Heads of Departments.

When aspects of the school were discussed during the interview, I became aware of the uniqueness of Gamma’s highly effective whole-school culture. (However it was not able to be part of this particular study.) Another contributing factor to Greg continuing the departmental culture as it was may have been that he was appointed from within the school.

Although not a recent appointment, Beth briefly commented on how her department had been quite traditional when she arrived and the initial shaping of the department was made easier because it was at the time of national change when a new examination system was first introduced. Similarly, Anna later discussed how she used opportunities such as the introduction of the new National Curriculum and the revised assessment Achievement Standards to progress further with aspects of shaping the departmental culture.

The other two Heads of Department, Debra and Eric, were not able to reflect on the *initial* assessment and shaping of their departmental culture because they had been in the position for ten years or longer and could not clearly remember about that long ago. Once the culture had been assessed and understood, an evolving strategy could be defined.

4.3.2 Philosophy

Each department's philosophy was shared and created by the group. This was done through discussions about what they wanted the students in their school to understand and experience. Anna stated, "The most important thing I want is a philosophy for the department which belongs to them and also blends with the school." Beth referred to the departmental philosophy while creating the strategic plan with everyone, one of the first things she undertook when first becoming Head of Department.

We looked at where we wanted to go and the key thing we wanted was an *I can do* attitude from students and for them to be independent learners. The exercise of getting the department to sit down and think about their philosophy and what they wanted as maths teachers, and what they wanted the department to look like, gave them focus and made the assistant Head of Department and I realise how important it was to build teachers' capacity. Because we don't have the impact on the students that the teachers do. So if we make sure they have all that they need and that they are flexible, then that is the best way we can serve our students.

The philosophies from all the schools supported individual teachers while working as a team. Some of the statements which reinforced this during the interviews were, "respect the individual," "let people stand out," "be responsible for not just oneself, by sharing work you have written and sitting down together to comparing how it worked."

One Head of Department discussed how they had a staff member whose personal teaching philosophy was contrary to their departmental philosophy. With encouragement over time, this person made the decision to move into another department which better met their needs. This was a deliberate leadership act on

the part of the Head of Department to create a more stable culture within the mathematics department and maintained their key philosophy.

Throughout the interviews it was clear that each Head of Department defined the philosophy more by what they did than by what they said. Beth said, “the key way is that I model it.” In summary, the Heads of Department implemented a philosophy through leading by example in order to achieve a vision.

4.3.3 Vision for the Department

All the Heads of Departments had a clear sense of vision which embraced the philosophy and the conceptual and pedagogical aspects of mathematics. They understood that it was important for students’ long term growth in the subject to build an understanding of mathematical concepts before learning technical skills. One of the dominating aspects from the vision of each case study was promoting excellence and having pride in student achievement. This helped develop effective culture by describing what the core business in the department was.

Each Head of Department had not drifted into their role - they chose to apply for the position, wanting the opportunity and coming into it with strong ideas about how they should proceed. Anna said:

I have a pathway, my own vision, I just have to be patient sometimes.
But I have timelines and have full intentions of getting there. The first vision was that I wanted them [department staff] all together. The second was to change people through ownership, strengths and perseverance.

Beth had a vision of increased teacher capacity and leadership. One of the reasons why this vision was not initially shared with the whole of the department was because she believed some members were not ready to take certain aspects of it on board.

Anna and Beth’s plans were practical, achievable, and although they were shared with members of their departments they largely emanated *from* the Heads of Department which is quite different from a philosophy which is constructed *with* a department. It was also emphasised that these visions had to be able to grow and

change over time. Greg and Eric's departmental vision was one which strongly reflected that of the school vision. Debra was less sure about a departmental vision, referring me to the school mission statement and preferring to talk about the departmental philosophy.

During the interviews while discussing vision, it was a common finding that successfully inviting and uniting others in the pursuit of the head of department's vision required trust and the ability to communicate a passionate shared philosophy.

4.3.4 Physical Environment

The interview data clearly brought out three points concerning the impact of departmental environment on culture, the first being classroom proximity, the second being a central resource room or lack thereof, and the third being whether the Heads of Department had separate offices.

The proximity of classrooms had a major effect on culture. It was important for collegiality that teachers within a department were situated close to each other, and that they taught in classrooms set up specifically for mathematics. Two of the Heads of Department had experiences where members had taught maths classes in another subject area's space. Within Eric's department one of the science teachers was teaching a maths class in their science lab. This isolated the teacher and the students were continually distracted by the science equipment. When this class was relocated into a maths classroom the environment became one of more effective learning.

To enhance teacher proximity, two of the schools had central resource rooms where teachers were able to work during their non-contact hours. The resource rooms had separate work stations and also allowed for sharing, both academically and socially. At Alpha High School, Anna believed that physically bringing the teaching group together into a central resource hub had a positive effect on the development of the departmental culture. In contrast, three of the schools had resource rooms which were only used for storage. In Beth's department it was

said, “we have a resource room but we seldom use it, we walk through the resource room to get stuff.” Eric said, “it’s a place we can put stuff and although there is some space to work, people don’t really use it.” In these schools department members spent their non-contact time either in their own classrooms or in the staffroom. This absence of a central working area did not appear to prevent these departments from developing a highly effective culture. In these cases all the Heads of Department arranged various focus times and places for teachers to gather in order to enhance the departmental culture.

Other environmental factors perceived by Heads of Department to have a positive effect on developing departmental culture included: a reading room, because it was important to the Head of Department to have a place to read about students’ learning, and a strong ICT focus for sharing resources. Both of these indicated a progressive outlook towards adapting and moving forward by enabling teachers to come to know and implement recent education developments. Additionally, the Heads of Departments said they did not need separate offices, and if they were given one, they moved out of it frequently to be with the rest of the department. The more interactions the Heads of Department had, the greater the ability to build trust. Anna made the statement that if she had her own office, “Who would get to talk to me? Who would get to hear about my knowledge? How well would I know them? How much could I trust them?”

4.3.5 Building Trust

It was interesting to observe that Heads of Department being easily available to department members led to the development of trust. Similarly, the Heads of Department needed to have a robust knowledge of the academic side of mathematics and an in-depth understanding of the development of mathematics curriculum. Anna remarked that teachers gave her trust because they were seeing results. Eric commented that he had to show them that “I knew my stuff and could do it.” Beth said, “They had trust in my mathematical ability.” It was difficult to elicit further information around trust because in order to expand on this aspect of developing departmental culture the departmental teachers would have needed to be interviewed as well.

4.3.6 Managing Teachers' Response to Evolving Departmental Culture

The experience of the participants suggests that important to developing a departmental culture, was first, to identify people's strengths in order to utilise these by giving ownership to individuals in their key areas, and then persevering with the new structure. As Anna said, "everyone has their own strengths, let's put that strength together". All the Heads of Department discussed how they could not continue if teachers' uncertainty and anxiety were too high. Anna said that when teachers have anxiety about a change being made, they will put barriers up.

You have to either barge through them and risk having bad memories, or you back off and chip away until you end up getting together to solve a particular problem. You put help in so that the person grows. Otherwise they remain dependent on you. Sometimes I still move too fast. When that happens I pull back a little and make space.

When questioned further about how to recognise that the pace has become too fast, the response was:

Things were not getting done or being completed at too shallow a level. When I ask a hard question and it is followed by silence, I pull back. I carry on doing what I am doing and when I think they are ready, I look for signs and pop it back out there again.

This illustrated the wisdom of introducing change gradually rather than suddenly, with due regard for the views of others. The pace of change was also context specific, and if students were suffering the requirement for more rapid change would have increased.

4.4 THE LONG HAUL – EVOLVING EFFECTIVE DEPARTMENTAL CULTURE

This next section outlines how the Heads of Department reported the evolution of effective culture over time. All agreed that for long term benefit to the culture they needed to stand firm on their principles and yet at the same time accommodate the needs of others. Eric made the statement, "the main thing that

follows me around is to make the teacher's job easier. To do this I need to let them know where things are at, what is happening, and to be efficient." The following elements of the evolving of an effective culture are outlined: style of leadership, learner centred, communication, opportunity, capacity building, celebrations, recruitment, retention and reflection.

4.4.1 Style of Leadership

There were similarities in the Heads of Department leadership styles, and in all five departments structures existed for the teachers to hold supporting leadership roles. First, the Heads of Department all concentrated solely on the mathematics department and were not distracted by other leadership opportunities within the school. Next, all considered they had a collegial style and distributed leadership. Greg said, "I see our department as non-hierarchical; everyone has an equal footing in the department." The consensus was that there was no one role that was particularly significant; in fact it was the direct opposite in that it was ensured, as far as possible, that no one person was indispensable. Eric said "We have rotated the responsibilities around so people can pick it up if someone is not here." Anna, who was relatively new to her school had inherited a less than satisfactory situation and perceived that teachers needed to have their own personal responsibility and success:

I don't go out and take claim for things. I generally give it to the others, saying, 'I will introduce you and you talk about it and put your name to it'. Then they feel empowered. They have their own power and success. They are not fighting for my little bit, or I am not fighting them to claim something back. Everyone has their own strengths and let's put that strength together.

The topic of delegation emerged further into the interviews. Eric commented that when he arrived at his school:

It was more the co-ordination of things rather than the doing of it. So that was something I had to get my head around. I was used to doing it all myself and it was kind of the way I had operated. That is something I still do a little bit too much. I need to delegate things a bit more rather

than just get on and do it myself. Because I know other people need to have an opportunity to be involved in those sorts of things. There are people here who want to move up in terms of responsibilities.

The concept of delegation was reinforced from a statement within Debra's department handbook:

Giving all department members responsibilities within the department gives them ownership of the process. This is an effective technique in ensuring that teachers contribute and that they feel that their contributions are valued. The carrying out of these responsibilities also involves a considerable amount of professional development.

The Heads of Department did delegate and were aware of how important this was for effective departmental culture. Still Greg and Debra struggled to feel that they were delegating enough and this was illustrated when Greg said "I think *I will just do it* and this can be a disservice to the rest of the department as they can become a bit dependent that way, but there is a lot of work in delegating tasks." A notable point in the findings is that although Greg highly regarded his whole school culture with a rotating Senior Leadership Team, he did not model this structure within his own department. The common thread was that delegation enables the Heads of Department to be more involved with department matters as well as freeing up time to concentrate on other aspects of their role.

Additionally, not acting as an unnecessary intermediary helped maintain effective culture within the department by ensuring conversations happened between department members. Beth discussed instilling within her department members the need to go directly to the source and not ask intermediate people along the way. She believed this helped avoid confusion and further reinforced shared leadership by showing respect to those with areas of responsibilities.

Being flexible was important for the Head of Department. They were willing to try new ideas and listen to feedback. Eric indicated this when he reflected, "then they said to me that it was not working and they were not getting the results, so we reverted back to what we were previously doing."

One final characteristic of leadership style was that although they were all busy Heads of Department, each had developed the skill of being able to put down what they were doing and give time to individual members of the department. Beth kept her diary open and available so members of the department could write directly in it for a time to meet and chat. Debra highlighted being available for people when she said, “when someone comes in for a chat it can be quite difficult but it is vital to put aside what you are doing and take time for them.”

Many of the Heads of Department made reference to how it was easier to lead change if there was also change within the school or nationally. Greg stated:

I came in as Head of Department at the same time as a new Principal was appointed. The role of the Head of Department has taken on a much more vital profile in the school. We have even had a change of name and are now called Leaders of Learning.

4.4.2 Learner Centred

During the interviews it became clear that having a Head of Department who was focused on learner centredness was highly significant for the evolving of an effective departmental culture because it increased teacher job enjoyment. Teachers on a full teaching load will spend 80% of their day with the students and, as Debra stated, “the job is particularly unsatisfying if you feel like you haven’t connected with the students during a lesson.” This is especially so for a subject like mathematics which is compulsory in the junior school and generally chosen in the senior school because of career options, thus increasing the risk of having reluctant students in the class. One artifact, the department handbook, given by Beth’s department stated, “The department’s main focus is the student, and the focus of the professional development strategies within the department has been to shift teachers’ focus to catering to students’ learning needs rather than on merely teaching the content.” Anna talked about how it took a few months for the department to understand why you need to know your student. “We had discussions about what we wanted our students to understand, and therefore what needs to be taught so students have seen and understood those experiences.”

The Heads of Department designed programmes to suit students' needs and ability levels, with success in mind. Eric said, "This has helped to develop a culture with the students to be keen on maths and has made the job of the teachers a bit easier as well." Anna's and Beth's departments ensured they had age specific work and if a student did not move a level from Years 9 to 10, they did not repeat the same content. Anna reflected that, "To achieve this we bring in a new skill at the same level but with experiences appropriate to the age of the student." Increasing relevance for the student increased student motivation and interest in mathematics which enhanced teacher job satisfaction and effective departmental culture. Job satisfaction is often connected to extrinsic and intrinsic rewards at work. Because teachers usually do not have many extrinsic rewards to count on they need to achieve satisfaction from intrinsic sources, such as their work and their contact with students.

4.4.3 Communication

All Heads of Department considered communication important for the maintenance of an effective culture within their departments. When asked to estimate how much time was spent on communication the answer was approximately two hours a day which related to half of their daily non-teaching time. Being face-to-face was most important, and listening dominated. Anna said: "If I have to say anything about maintaining culture, it's listening to my team" as she could gather so much from body language. Eric said:

A lot of subtle communication is going on; sometimes it might be just passing in the corridor or informal conversations for those teaching in similar subjects. I don't get worried if people are not all on the same page at the same time. So it's keeping your finger on the pulse.

This emphasised the importance of individuality and informal communication.

Formal communication included email, wikis, the school intranet and websites. Emails tended to be sent out to the whole group and used for administrative tasks, "If you had to send an email to just one person then it probably should be said in person". Debra had a weekly department notice to keep everyone in touch with what was happening during the following week and what would be discussed at

the department meeting. As this school had a large number of the department also teaching in other subject areas it was important for them to know if being present at the department meeting was vital.

Meetings were another form of communication that was discussed in detail, and I supplemented this with an analysis of minutes of meetings. Four qualities were found. First, there was ample time for discussing topics directly connected to the everyday work of teachers and the shared philosophy of the department. Second, there were structures that ensured opportunities for everyone to voice ideas and opinions. Third, everyone had opportunities to express their ideas and receive feedback from their colleagues. Lastly, teachers left the meetings with deeper understandings of some issues than they had before they came.

However, during their interviews, the Heads of Department were silent on the effectiveness of meetings. With prompting it was revealed that most of the departments did not have as many meetings as expected once the Head of Department had been in the position and established what they considered effective departmental culture. For example, Eric's department managed only two meetings a term. "I'm not a big meetings person and I know people want their time and space to be able to relax." Anna's department, which had regular meetings, was still at the culture development stage and was using meetings to help create the philosophy. She had a firm policy established that both the Head of Department and Assistant Head of Department needed to be present or the meetings would be cancelled. In all other schools, the meetings were short, sharp and less frequent. In Beth's department, the meetings mainly focused on professional development, "we hardly ever do administration." This lack of meetings showed trust and autonomy of the teachers. However, each Head of Department was aware of this and was conscious of the need to evolve the culture of the department. Beth said:

There is a high risk that the departmental culture becomes disjointed and isolated. So I am at the stage of thinking about how I have these teachers who are leaders, but I still need to keep mathematics and classrooms as the focus. So that's my challenge, to keep our core business in focus.

Managing tension between department members was crucial for maintaining effective communication. Although necessary, the Heads of Department found this aspect of the role difficult. They talked about how they have had to learn how to manage difficult conversations, such as shifting negative attitudes towards positive dialogue. Debra said, “if someone is going down the line of a complaint, that kind of stuff I hate having to deal with.” To be effective in these challenging conversations Debra would try, “to engineer a conversation, but first I do the ‘homework’ before talking with anyone.” Two Heads of Department discussed the need to give themselves space and time, and not react too quickly. Debra talked about how some problems are ‘not real’ problems. Beth said:

It is all about timing. I came to understand that I should not be offended by what people do. You have to work with personalities and not get caught up. I do this by remembering that if they want to punch you it will only hurt for a short time.

Anna said, “it is hearing the cry and knowing whether the cry is a cry for attention or a cry for help”.

4.4.4 Recruitment and Retention

For the Heads of Department who participated in this research, the evolving of an effective departmental culture had a focus on recruiting and retaining quality teachers who not only understand the students in their schools, but also focus on the mathematics curriculum. New teacher induction programs, in addition to assisting with the procedural side of teaching, specifically target inducting teachers into the culture of the department and ‘the way things are done around here’. Strategies such as pairing long term members of the department with new recruits helped pass on positive attitudes and behaviours. When asked for recommendations as to what someone new should *not* do, Beth said, “to take the unit plan word for word for what it is. Instead I would rather they used the spirit, and do whatever they like, so long as they meet the achievement objectives.” This illustrated trust.

One of the biggest worries for the Heads of Department was if they were to suddenly lose part of their team. To discover their teachers' needs and help retain department members, listening to teachers' opinions and queries was vital. These conversations were not about the teachers themselves but were driven from discussing what the students required. Anna said:

I watch the teachers and I listen to how they are planning. Then I ask specifically what they are doing and how they are doing it. I have suggestions and can always head them in the next direction as I never ask a question I can't answer. Also I can see what they need immediately from the questions that they ask.

Another key was to read the teachers' body language. Greg said "I know their stress levels", - while Beth commented, "it's learning when to watch their reactions." During this part of the interview, three Heads of Department said that they did not do enough formal appraisals, disclosing that they felt that the informal was more important than the formal.

Four of the five departments in this research had at least one teacher in their department with high needs because they were not currently coping. Eric discussed how you cannot prop up someone who is struggling by regularly having another teacher in the classroom with them. "You support as much as you can but they have to manage the teaching role themselves. However they still need to feel that they are part of the team." Along similar lines it was said:

There are some teachers who won't work with students of certain abilities or subjects and keeping them apart helps, but it must remain fair on the other teachers. It's the dilemma about do you put your best teachers with your best students to get the best gain, or do you put your best teachers with the worst students to make a little bit of gain. It usually ends up a mixture.

Debra used an additional strategy to keep an overview of how the teachers in her department were managing by entering the results data for the entire department:

You have to be able to pick up things before they are problems and one way I do this is through data entry. It takes time but I learn so much and

can see trends, especially in curriculum levels you are not teaching in. It may be because of the students in it, or is it the teacher?

4.4.5 Capacity Building

Capacity building was important to the culture as it encouraged teacher learning to be a natural part of a mathematics department's life. In these departments, capacity building referred to teachers taking advantage of opportunities to increase responsibility, responding to challenges involving gaining further knowledge and skills, and gathering new innovative resources needed as well as interacting with others who could help. Beth discussed how, "We have non specialist maths teachers, [so] right from the start we needed to build capacity in terms of those teachers and also to build leadership in the department". To achieve this Heads of Department in all five case studies had teachers who were not the Assistant Head of Department coordinating courses. In this way everyone in the department had opportunities to learn, to figure out ways in which challenging standards might be met, and to respond to the needs of the students that they were responsible for. One artifact, the department handbook, stated, "teachers can only become independent in terms of the teaching and learning of mathematics, if they are given opportunities to do so." All Heads of Department were firm in their conviction that when teacher capacity was enhanced, interest and excitement in the work increased.

Through professional development teachers were motivated and contributed to the department which was an indicator of effective culture. Every department was involved with initiatives such as the Literacy, Te Kotahitanga, and Secondary Numeracy Project. The Heads of Department also recognised the necessity of continual personal learning and had undertaken tertiary study at postgraduate level, been writers, moderators or assessors of NCEA mathematics for NZQA; as well as having been involved with curriculum associations and the presentation of papers at conferences. Beth went to conferences to "regenerate" while Debra found the conferences got her "all fired up". Their responses suggested that they had developed a better understanding of current information about curriculum development which benefited their department's education planning. They made

a strong effort to pass this on to their departments, recognising that they were but “one part of a team”, and acknowledging that if they were to leave tomorrow their departments would continue on effectively without them. This showed that in order to increase capacity, teamwork was crucial.

4.4.6 Celebrations

The use of social occasions to enthuse, recognise progress and highlight achievements was given a minimal response with four of the departments not being able to think of many instances. Debra’s department had a teacher whose role was social secretary. “She tells us when we need something, for example at the beginning of the year to get to know new staff.” In Beth’s department there was someone who:

Was really relaxed and he helps to balance us in a different way. He loves to cook and will organise lunches which get us together. Otherwise we would only get together when we have a little project and stuff like that.

Greg’s department had no department gatherings and socialised more with other departments or as a school. In contrast, Anna’s department got together regularly each week for ‘pink-bun Fridays’ and she also handed out commendations to recognise the teachers who had done something for which she was grateful. Whilst Anna’s response suggests a belief that celebrations are important in the evolving of an effective culture, the other Heads of Department alluded to how the teaching role was getting ‘too busy’ to enable time for events.

4.4.7 Reflection

All Heads of Department described learning about leadership on the job and acknowledged the influence of role models and mentors. Some also discussed how taking time each day to be creative gave them headspace. Anna heads off site for at least half an hour for reflective thought. “I take something that is a bit quiet, that does not need attention right away, that will ease all the turmoil inside and for half an hour I might create”. Debra had difficulty finding time and space to regenerate. “I honestly don’t think there is enough time. I feel that my own teaching is suffering because you don’t have time to do that creative bit”. Three

of the Heads of Department were considering the next stage in their career and whether they wanted to remain in the role they currently had. Greg commented on how the Head of Department's job was more demanding than the one he had held in the Senior Leadership Team. This was a sentiment echoed by all the Heads of Department highlighting the importance of the school giving the Head of Department sufficient time to maintain departmental culture.

4.4.8 Strengthening Culture Through Team Empowerment

Teamwork was directly mentioned during the interviews through statements such as Anna's that, "Together everybody accomplishes more". Also indirect references were alluded to as it was important within so many of the other aspects discussed. For example, the Heads of Department provided an environment that facilitated and promoted teamwork and the Heads of Department leadership style was participative, encouraging teachers' involvement and idea-sharing, in order to support teamwork.

Each department's culture had been further strengthened through teamwork as teachers had supported each other through difficult moments. Some practical examples of this included covering classes when people were sick, sharing spaces when classrooms were burnt down, and having the timetable restructured when needed. Debra summarised this by saying, "the department is interwoven which makes it strong," while Anna said:

Each person is an individual but cannot stand alone. When they actually believe and become dependent on each other, while still standing upright on their own - then they have a really solid foundation that grows strong and connected. That is how they can get through those tough times.

4.5 CHAPTER CONCLUSION

The Heads of Department were generous in their responses to the interviews and collection of artifacts. Taking time for reflection on the development of the culture within their department, together with considerations about their own leadership skills and approaches, allowed each of them to highlight their

experiences. There is uniqueness to the context of each case study. However commonalities emerged to reveal the key themes discussed in the findings. I shall now move to the next chapter where I undertake the analysis.

CHAPTER FIVE: DISCUSSION

While the Head of Department was still required to provide curriculum pedagogic leadership, leadership in a much broader sense and management skills were to be given greater emphasis (Rosenfeld et al., 2008, p. 4).

5.1 INTRODUCTION

This chapter considers key threads from the research, connects them with findings from the literature and comments on implications. Rather than mirror the structure of chapter four this discussion has a more narrative approach and intentionally utilises Schein's (2004) three levels of organisational culture. The first focuses on observable behaviour and artifacts, the second looks at shared values, rules and behavioural norms, and the third covers underlying assumptions that form the layers of culture from the most easily observable and least determinant to the least easily observable and most influential.

5.2 OBSERVABLE BEHAVIOUR AND ARTIFACTS

Heads of Department usually start to develop departmental culture by influencing clearly visible aspects. These are artifacts such as the environment, routines, websites, traditions, leadership structure and subtle differences in department language. Schein (2004) suggests that the first level, observable behaviour and artifacts, tends to be superficial and self-evident. Three were strongly evident from the findings; the initial department design, the physical environment and the departmental leadership structure.

5.2.1 Initial Department Design - Developing the Culture

Participants identified that when first appointed to the role of Head of Department it was important for them to begin by observing. This fits with the prevailing literature by Schein (1983), Turner (2000) and others on effective leadership, which suggests that beginning with observation of the current practices can be

more constructive than starting out with preconceived ideas of changes to be made. The Heads of Department stated that observation provided valuable insights into how the existing departmental culture functioned, and as mentioned by Beth in chapter four, it could be considered part of the first stage of a strategic plan. Senge (1990) stated that “an accurate picture of current reality is just as important as a compelling picture of a desired future” (p. 9). Sergiovanni (2001) also contributes to this finding when he comments that following observation, “[leaders] are less likely to base their practice on the assumption that predetermined solutions exist for most of the problems they face” (p. 2).

It is noteworthy that the Heads of Department in this research all had previous leadership experience and used this to know what to look for to be effective in their forward planning and decision making, which is consistent with the work of Turner (2000). Learning-on-the-job was clearly a major influence on the department culture leadership capabilities that they had developed. Similarly the Heads of Department discussed how they used mentors in middle management or the Senior Leadership Team for insights and the confidence to develop departmental culture. Deece (2003) also found these results when he researched how leadership styles were acquired. These role models were valuable in both a positive sense of ‘what to do’ and in a negative sense of ‘what not to do’.

The contrast between the case studies in which the Head of Department was an internal appointment and those in which they were external appointments was interesting. It was evident that the internal appointees, Greg and Debra, initially made minimal changes to departmental culture, whereas external appointees began with considerable change. It was not that the internally promoted Heads of Department did not consider reflecting on the departmental culture, but more that they had remained at the school and applied for the position because of the existing culture, therefore there was not the drive to make changes when they first took up their Head of Department roles. There was a dearth of information in the research literature about culture and internal versus external promotion within education. Further research would provide more insight on these two situations and have implications for future staffing; for instance it could be suggested that if a department had an existing ineffective or counterproductive culture, appointing

an external Head of Department could have more influence in changing the culture to a more effective one, a conclusion previously found in business research (Lauterbach, Vu, & Weisberg, 1999).

It was noted in the findings that once an effective departmental culture was established, the need for policy manuals, organisation charts, or detailed procedures and rules was seen as less vital. In this research, although these documents existed they were not the focus of the participating Heads of Department. This was not an unexpected finding, as explained by Peters and Waterman (1982) and Schein (2004) when they proposed that when a culture is strong, people know what they are supposed to do in most situations because the guiding values are crystal clear. However the less pivotal role of documentation is not always evident. Practical experience shows that Heads of Department can easily get caught in a web of administration enforced by national and school prescription.

Greg's situation of having a departmental culture that mirrored the whole school culture was unique among the case studies and could possibly be a rarity in New Zealand. The literature by Siskin (1991) on subcultures shows how secondary schools have expanded to such a degree that they have splintered to the point that the department rather than the school effectively marks the bounds of 'major interactions' for most teachers. Schein's (2004) experience is that "with large organisations the variations among the subgroups are substantial", implying that small organisations have less variation (p. 14). Therefore it could be speculated that within a small school, departmental subcultures may be less prevalent. However this could not be investigated within this research as the schools were restricted to being of mid-range size and Gamma High School had 800 students. Therefore to draw conclusions as to why the Gamma High School mathematics departmental culture reflected the whole school culture would need further research which is school wide and not focused only at the departmental level.

It was recognised, in this present research, that once aware of the department's cultural past, the approach of the participants towards either changing or building on existing culture was undertaken with dialogue, concern for others and some

hesitation, showing sensitivity to context. This 'people focused' path will be discussed more in later sections; however it needs to be noted that departmental culture development takes place in a fluid setting, and maintaining culture is never finished. Rather it evolves through a multi-staged, interactive process. In both the literature (Moore, 2007; Rosenfeld et al., 2008) and the participants' responses, it appeared that the process of evolving departmental culture was more effective if undertaken during times when change was also happening within a school, or nationally. One could engage in conjecture that the participating Heads of Department were cloaking their own change agenda within these 'other' times to help retain the cohesive nature of effective departmental culture, perhaps creating an 'us' against 'them' mentality. This could have been a way of introducing change without dramatically influencing or upsetting the pre-existing culture.

5.2.2 Physical Environment - Proximity of Teachers and Accessibility to the Head of Department

It was apparent from their comments that all Heads of Department understood that the physical location of the people in their departments mattered enormously to the culture. This echoes research on the secondary school environment by Earley and Fletcher (1989) which has shown that physical barriers can hinder the development of effective culture. For the departments in this research, ensuring that there were no physical barriers meant having the teachers in classrooms situated close to each other. Being near other teachers in the same subject encouraged communication and sharing which helped to overcome the danger of them working as isolated silos.

An extension of the conclusion that it is an advantage to have a department's classrooms grouped together, would be that a shared resource space could further enhance departmental culture. For example, Anna had used the concept of a separate departmental resource/work room as a pre-requisite for developing a collegial culture. The literature supports this by emphasising the benefits of a collective collegial area (M. Brown, Rutherford, & Boyle, 2000; Shank, 2005). However, as discussed by Earley and Fletcher-Campbell (1989), whether or not

the department has a resource room can be out of the control of the Head of Department due to limited school space and financial constraints. The department subject can also be a factor as there will be priority given to some, such as science, where a central space for storing and preparing experimental equipment would be a health and safety factor. Therefore the research finding suggesting that the lack of a central gathering space was not a barrier to the development of effective culture within the mathematics departments of this study was unexpected. It is interesting that Rule (2004) states that a space can be physical, virtual, intellectual or social but it is always characterised by dialogue. Environmental structures within a department can be created both formally and informally and it seems that the five Heads of Department interviewed in the course of this research understood this. They managed by establishing either a focal point for the whole department, or alternatively, a time when everyone was free to gather. This reinforces Hargreaves' (1994) suggestion that time allocations allowing teachers to congregate rather than exist separately in classrooms are important for balancing the effects of teacher isolation and the development of collegial behaviour.

The final physical environment finding of the research was that accessibility to the Head of Department was an important factor in the development of an effective culture. All five interviewees found it vital to be “around”, with the common theme being “we meet all the time informally”. This indicates a need for the leader to be visibly present and available, and to make the time to socialise with members of the department. Marland (1971) also raised this when he pointed out how it is necessary for a Head of Department to be accessible to other members of a department during break times.

5.2.3 Leadership Structure and Style

Each Head of Department's leadership style incorporated a comprehensive view of the subject, the capacities of people within their department, and the context of the school community. This often began with the feeling of wanting to help teachers in their subject field to “make their life easier”, which then moved on to become a conscious choice to lead. It was apparent in the research that there was

a strong connection to the concept of ‘servant leadership’ - when the Head of Department looks to the needs of the department members and asks how he/she can help solve problems and promote personal development (Greenleaf, 2002). It is a leadership style that emphasises creative collaboration and collegiality, in contrast to a top-down hierarchical style (Gergen, 2009). This impacts on the culture of a department in that there is a perception that support and help are readily available.

Within the literature there seems to be some debate about the extent to which the two terms ‘collaboration’ and ‘collegiality’ are interchangeable. Reflecting on collaboration, all Heads of Department deliberately worked on formally developing and explaining this practice within the culture by setting up shared leadership situations. This fits with Timperley’s (2006) view that shared leadership encompasses the idea that leadership is a collaborative act with interdependence among the key players.

In the present research it was noted that collaborative opportunities were structured into time made available by the Heads of Department, rather than simply left to happen spontaneously, as they were seen as an integral part of the departmental culture. This reflected the research of Nias et al. (1989) who argued for processes that help staff to be included and become socialised into the culture of a department. The research participants found that when colleagues were encouraged to communicate with their co-workers, and work as teams rather than as separate individuals, members were challenged and stimulated to find their full potential. Often this resulted in high levels of motivation and satisfaction, contributing to the effectiveness of the culture. As Southworth (2002) points out, such a collaborative culture has long been associated with school improvement.

All Heads of Department in the research believed that collaboration led to better results than competition. They also recognised that teachers previously accustomed to working in isolation needed to be offered focus and parameters as they moved towards working in teams. Providing support, encouragement and acknowledgement of progress ensured quality was valued over quantity and creativity over conformity. Finally it was recognised that there was sometimes a

need for confrontational or discussion opportunities to be put in place for individual teachers who were failing to fulfil their responsibilities.

Collegiality assumes that at departmental planning level professionals have a right to share in the wider decision-making process of the department (M. Brown et al., 2000). It was evident that the notion of collegiality had become embedded in most of the case studies and that the Heads of Department had either established or were about to establish this ideal in departmental decision-making.

Heads of Department also indicated that they had awareness and appreciation of the individuality of their department teachers, and knew it was not always beneficial to force them to get along. However, when teachers talked, planned together, shared information about students or simply enjoyed the social pleasures and conviviality of each other's company, then culture was enhanced (Hargreaves & Goodson, 2006). In contrast to the purposely planned opportunities for collaboration and collegiality, participating Heads of Department felt that conviviality was developed more informally through spontaneous and voluntary events. This view fits with Hargreaves' (1994) critique of contrived collegiality which involves administration, implementation predictability, regulation, compulsion, and a fixed location and time.

When invited to reflect upon the structure of the leadership within their departments that helped promote collaboration, collegiality and conviviality, the participants all talked about the effectiveness of distributed leadership. Micro-management was seen as undesirable. This reinforces Durrant and Frost's (2003) view that distributed leadership promotes the development of networks which should be seen as a 'community of practice' in which teachers experience a sense of belonging. The participating Heads of Department emphasised problem solving through collaboration, and involving staff in critical aspects of the department such as developing goals and decisions. First they explained the formal distribution through management units and time allowances which was similar to the common practice of most secondary schools. Then discussions went on to aspects of informal shared leadership which included all members of the department. It was evident that this was seen as a means of encouraging the

continual reinforcement and development of leadership, enabling a succession plan to be in place so that no one person would become indispensable. As Harris and Muijs (2005) state, with distributed leadership there are “multiple sources of guidance and direction, following the contours of expertise in an organisation, made coherent by a common culture” (p. 31).

In creating a departmental culture with distributed leadership, Heads of Department operated with a sense of positivity and encouragement, respecting teachers as professionals and making provision for reflective feedback, particularly in the development of appropriate student courses as discussed in chapter four. This was directed both from the Head of Department towards the teachers in the department, and towards the Head of Department from the individual teachers.

The Heads of Department acknowledged that stepping back after the distribution of leadership took persistence, both for themselves and for the members of their team. The consistent element expressed by all Heads of Department, two of whom suggested even more could be achieved in this regard, was that a focus on delegation and succession planning was integral to successful departmental culture. The risk is that sharing leadership contains greater potential for failure if the departmental culture does not work well.

Once a culture of distributed leadership has been accepted, the departments could then begin to work towards the next level - engaging critically with departmental values and goals (Woods, 2004).

5.3 SHARED VALUES

As has been seen in the previous three sections, artifacts of initial design, environment and leadership were used to influence and nurture desirable shared values, enabling them to evolve, grow and strengthen. Deciphering this second layer of departmental cultures helps to understand the biases and directions in which the participating Heads of Department ‘pushed’ or ‘pulled’ to shape their

departments, and required searching for the shared values which were their particular strategies, goals and philosophies.

5.3.1 Building a Shared Vision

Schein (1983) expressed the view that a Head of Department will have a vision of the effective culture within the department which is likely to be found only in the leader's head. Each person in the department pictures the organisation at its best from a unique point of view. The participants in this research echo this perspective and, in order to embed a *shared* vision they led the creation of a shared departmental philosophy. This was a collaborative activity among the teachers as they became co-creators of the values and beliefs that would guide vision and philosophy within the department. Vision and values must be shared before people will be willing to accept the discipline, structures and systems that embody those philosophies (Greenleaf, 2002; Kotzur, 2006). MacTavish and Kolb (2008) found that authentic, trust-based relationships were essential in the successful saturation of values across an organisation. Significant for developing a shared philosophy, was the place of 'walking the talk' by the Heads of Department in this study. Stolp (1994) and Aitken (2007) noted how effective culture develops deliberate role modelling by leaders and vice versa. The actions of the Head of Department are noticed and interpreted by others as to 'what is important'.

The philosophy and vision created within effective departmental culture emphasises the nature of the subject. It is important that teachers convey understanding, not just information to students. The literature emphasises the importance of developing high-order thinking skills within the students to achieve this (Wenglinsky, 2002), which has important consequences for effective teaching. Teachers who are not performing well can be quite exposed. To counter this and ensure everyone in the department felt comfortable and capable of teaching within the subject area, all of the case study departments valued professional development, which involved quite strong commitments by the teachers. The literature supported these comments referring to professional learning (Bascia & Hargreaves, 2000) as "continuous learning" (Kotzur, 2006)

and “professional reflective dialogue” (Moore, 2007). Most of the professional learning had a focus on seeking new and better ways of engaging students in learning. Specific reference was made by most Heads of Department regarding being part of the National Numeracy Project which aims at developing teacher knowledge and raising student achievement (Lawrence, Anthony, & Ding, 2009). This project’s over-arching philosophies and goals involve developing students’ understanding, selecting course programmes that build on students’ existing knowledge and ways of thinking, and focusing on departmental dialogue that centres on students’ thinking. Commitment to the project helped mathematics teachers towards developing more effective cultures by reminding and describing what the core business in their departments was. It reinforced Brown’s (1992) conclusion that professional development programmes should be designed to be both sensitive to an existing culture, and yet powerful enough to reorient that culture in the desired direction.

The personal creation of vision by the individual Heads of Department was not a static event. It was necessary that their vision evolved just as the culture did. Senge (1990) notes that at any one point there will be a particular image of the future that is predominant, but that image will evolve. This implies that the Head of Department who is able to adapt a vision to new challenges will be more successful in building an effective culture. However, equally, vision and philosophy provide direction and sustenance during change as they help in the navigation of crises and in reminding a team to look beyond the day-to-day processes.

5.3.2 Anxiety and Conflict from Issues of Power

In this research, resistance sometimes stemmed from fear of the unknown, or reluctance to alter the status quo. There can also be resistance because of feelings that some control and autonomy may be lost. This links with literature suggesting that the essence of a constructive approach to resistance is to recognise that when people resist change, they are defending something that is important to them that appears to be threatened (Schermerhorn et al., 2010; Yukl, 2010). The literature further discusses how cultures develop as they do because of the particular

distribution of power resources among their members, and the ways in which those resources are used over time (Busher, 2006).

All Heads of Department displayed insight and understanding into why their staff resisted change. One aspect they looked for in department members was anxiety, which was interpreted as an emotional response to situations based on feeling uneasy, tense, worried, or apprehensive about what might happen. Turner (1988) described anxiety as a “generalised or unspecified sense of disequilibrium” (p.61), with feelings of anxiety stemming from lack of security, predictability, and group exclusion. This finding is important, in that although only briefly mentioned in the literature review, in this research there was a recurring theme of the need for the Heads of Department to be aware when anxiety was present. They offered views of strategies that could be employed to gain teachers’ support for change, and stated it was important to first find the source of the anxiety, then either show that it no longer existed or else provide an alternative source of avoidance.

The research participants each endorsed the literature on team culture having the potential to alter relationships and, as Heads of Department first and foremost work closely with people rather than things, it was evident that relationships were held as being at the very core of a department’s cultural stability. This is congruent with Collier et al. (2002) research observation that dealing with faculty occupied a significant proportion of the Head of Departments time. As will be discussed further in a later section, all the Heads of Department demonstrated skilled communication and the willingness to listen carefully in order for their help in developing relationships to be effective. Teachers were seen as the most important asset in their departments. This illustrated that, by building quality relationships, Heads of Department are able to motivate and extend the ability of each teacher by aligning values, systems, structure and strategy. Ways to empower teachers include soliciting their advice and opinions, asking them to model effective instructional practices for other teachers, and praising and reinforcing their efforts in helping students learn.

The Heads of Department also alluded to conflict being inevitable in any on-going culture, which supports Gergen’s social constructivist view (2009). It can be

overt and open or it may be out of sight with avoidance being the most widely used strategy for dealing with it. However, conflict breeds conflict unless it is addressed successfully. Ghamrawi (2010) discussed how Heads of Department must be able to lead and facilitate communication of controversial or unanticipated issues in a skilful and non-judgemental manner in order to help teachers to learn from such evaluation procedures. Most of the participants viewed conflict as one of the most difficult areas within their role of developing an effective culture, although they had all found and facilitated individual strategies to handle situations successfully, depending on the context. This aligns with Gudykunst (2004) when he stated that *how* conflicts are managed can have positive or negative consequences. A conjecture could be made that Heads of Department usually have a background as curriculum experts, and conflict can be a murky area of the unknown. This may indicate that it would be beneficial to provide Heads of Department, if they feel the need, with training and support to develop effective interpersonal skills in order to help groups and individuals to work together.

It is evident that departments with effective departmental culture were open to change, willing to accept change and pro-active in instigating change.

McLaughlin (1987) discussed how teachers who were resistant to change were actually uncertain about the outcomes for students, or otherwise signalling their assessment that the new practices were not as good as the ones that were to be replaced.

5.3.3 Critical Self Reflection

Through a deliberate process of self-reflection the Heads of Department in this research were able to gain clarity of thinking and raised self-awareness in relation to their values; including how these influenced their leadership practices and developed an effective culture. They all mentioned areas that were not natural to them that they were developing, for example conflict resolution. Within the literature, self-reflection was most discussed in conjunction with transformative and authentic leadership practices (Branson, 2007; Hargreaves & Goodson, 2006; Shields, 2009).

Each Head of Department in this research valued time to reflect. Here, the work of Schön (1983) is useful, in terms of the reflective practitioner developing knowledge, understanding, skills and attitudes. Schön sees a potent mixture of reflection-on-action and reflection-in-action as necessary for professional leadership. Greenleaf (2002) discusses the strategy of pacing oneself by appropriate withdrawal and how it is one of the best approaches to making optimal use of one's resources. To achieve this Heads of Department needed to be able to escape mentally and emotionally from any immediate school related demands in order to reach a 'tranquillity of mind'. This would resonate with Krishnamurti's (1967) notion that "one listens and therefore learns only in a state of attention, a state of silence in which this whole background is in abeyance, is quiet; then, it seems to me, it is possible to communicate" (para. 3). This self-reflection resulted in the research participants being able to accept that, while they might be doing a good job as a Head of Department, there could still be areas to work on for improvement. To achieve this level they needed to have confidence in themselves in their current performance as department leaders.

Entwined with achieving self-reflection, it was acknowledged that time to practice it was critical but not always sufficiently available. With secondary school Heads of Department working within intense, complex and time-poor contexts, it was important for them that having adequate time to reflect should not be forsaken for the opportunity to complete more tasks. Concerns regarding the busy nature of teachers' work have also been expressed in the literature (Bascia & Hargreaves, 2000; Poppleton & Williamson, 2004). In addition, to take the time for self-reflection, the Heads of Department in this research needed to have the courage to look at defining moments in their life experiences.

5.4 UNDERLYING ASSUMPTIONS

The final layer of organisational culture involves the underlying assumptions that are unconscious 'taken-for-granted' beliefs, purposes and perceptions through which Heads of Department make sure that everyone understands the cultural

values. These determine how members of the department perceive, think, and feel (A. Brown, 1992).

5.4.1 Communication

The Heads of Department reinforced shared values in their words and the perspective adopted by the participants suggested that good communication with openness and transparency were an essential part of developing an effective culture which was also found in research by Bennis et al. (2008) and Gudykunst (2004). The research highlighted two aspects for achieving this. The first was to build departments around open dialogue, rather than discussion. A key strategy being that once an effective culture was established, long tedious weekly meetings could be replaced with dialogic conversation marked by a lot of informal contact. Rule (2004) states that dialogue is not realised simply in the form of a meeting but it requires an acknowledgement of the other and attentiveness to him or her. Recent literature (Ehlers, 2009; Kotzur, 2006) reinforces conversations which invite the reciprocal exchange of ideas, a view which contrasts with literature in chapter two emphasising unilateral transmission of information from one person to another. From a constructionist standpoint whenever people are conversing, they are co-constructing meaning (Gergen, 2009; Lock & Strong, 2010). Brazilian educationalist Paulo Freire (1974) discussed how dialogue facilitated the potential to learn from one another in an environment characterised by respect and equality, and referred to dialogue as a type of pedagogy. Conversation is an ideal way to reinforce developing collaboration as it brings people together, builds needed capacity, and wins the commitment needed from everyone to make the department work well. Literature confirms this by suggesting that teachers who work in a culture of open communication are also willing to share (Zand, 1997). Teachers were encouraged to think differently, to join together in a union of mutual responsibility and make good decisions for students together.

Departments do not always operate this way. Natural instinct is often for people to shy away from conversations that deal openly with different points of view. However, talking to like-minded colleagues provides only short-term safety. In the long run a climate of limited conversations encourages cliques, develops

we/they mentality and results in less effective decision making (Kohm, 2002). Heads of Department within this study learnt to separate ideas from personalities and to attack problems, not people, so that members of the department could disagree without hurting feelings. They could therefore feel safe within an effective work culture. Rule (2004) emphasises that dialogue assumes relationship and is impossible without it.

The second key aspect to communication that emerged in the research was the importance of listening. By listening Heads of Department were able to learn and gain the insights needed to strengthen the team. Krishnamurti (1967) discussed how real communication can only take place where there is silence to listen. Active listening can be extraordinarily difficult because people are generally projecting their opinions and ideas which are influenced by prejudices, background, inclinations or impulses, and when they dominate they are less inclined to listen to what is being said. Greenleaf (2002) says, "One must not be afraid of a little silence. Some find silence awkward or oppressive, but a relaxed approach to dialogue will include the welcoming of some silence" (p.31). As discussed by English (2005), effective listening can serve as a means of trust building, allowing department members to critique issues and share leadership.

While openness of communication is important in the development of effective culture, it was also understood by the Heads of Department that there were times when information was not shared if there was little purpose in the sharing. As Gudykunst (2004) commented, communication is effective to the extent that Heads of Department are able to minimise misunderstandings.

5.4.2 Centred on Learning

The Heads of Department focused their basic energies on developing learning programmes that suited the students within their school. In agreement with Kolm (2002), much effort was expended in designing the subject experience for students so that they had stimulating, rich, diverse experiences which had a strong positive impact on the culture of the department for teachers. I expected Anna to report additional issues that she faced with unhappy teachers as mathematics in Alpha

school was compulsory to the end of year 12. This could have meant that there would be some reluctant students present, and reluctant students can create unhappy teachers who in turn become sources of negativity within the department. But that was not the case as Anna ensured programmes were written so that if a student moved up a year in age, but did not move a mathematics learning level, then that student did not repeat the same content. She was therefore acknowledging that age and maturity do make a difference and as students get older incorporating relevant experiences for that age is important. The mathematics curriculum was found to be broad enough to bring in new content at any level. Decisions were focused on the individual learner, with an understanding of the learning process and levels of relevance to age (Murphy et al., 2007). Heads of Department who devoted time, energy and professional expertise to devising programmes in this way, rather than looking at the minutia that goes on within the programmes, ended up with more effective departmental cultures even though the time and effort required to achieve this was sometimes substantial.

Similarly the participating Heads of Department found that when teachers reflected on their own purposes as learners and linked this to the learning of the students in their schools it had a positive impact on the culture of the department. Conversations moved from “What was taught?” or “How was it taught?” to the far more important questions of “What was learned?” and “How can we use evidence of learning to strengthen our professional practice?” As Senge (1990) and DuFour (2002) discuss, a department engaged in self-improving organisational learning will work systematically to develop increased learning achievement, and will adapt and change when necessary. Empowering the teachers and increasing the social capital is essentially about networks, trust, engagement, communication, shared values aspirations and interconnectedness (Otero & West-Burnham, 2007; Putnam, 2002). This decreases teachers’ dependence on their Heads of Department and suggests that the Head of Department role then becomes one of quiet support rather than bold, visibly transformational action (Branson, 2007). As Frost and Durrant (2003) stated, once you engage teachers’ hearts and minds there is genuine development rather than mere implementation.

For the teachers in this research the main response to help establish a professional learning community with a focus on learning and a shared vision of what students can achieve was professional development. Fullan (2008) suggested that this transparency of team members sharing evidence of student learning creates an inescapable, positive pressure that represents one of the most powerful tools available for school improvement. It was noted that a catalyst for pulling all five departments together was when the teachers were involved in the Numeracy Project. This appeared to put in place the structure and desire for individual teachers to continue with their professional development. Further to this, Moreland and Jones (2003) suggested that inappropriate subject subculture can be addressed by appropriate teacher professional development.

5.4.3 Climate of Trust

A climate of trust and commitment was inherent in developing an effective culture and has been interwoven into many of the previous sections. Interpersonal trust has been identified in research as the fundamental cornerstone for trustful departmental behaviour and dynamic collaboration in the workplace (Dirks & Ferrin, 2001; Song, Kim, & Kolb, 2009). Bryk and Schneider (2002) asserted that:

Trust also lubricates the necessary social exchanges among school professionals as they engage together, learning from each other in the trial and error of implementing new practice. To be able to talk honestly with colleagues about “What’s working, what’s not” means exposing one’s ignorance and making oneself vulnerable. Absent trust, genuine conversation of this sort remain unlikely. (p. 123)

To achieve this, an openness and transparency of words and actions are essential. As previously discussed in shared values, conversation and communication is a vital conduit to people feeling valued, therefore they also enhance the building of trust (Daly & Chrispeels, 2008). All the Heads of Department in this research modelled trust, but clearly had not specifically thought it through as an aspect of their leadership practice. This finding suggests that trust is part of ‘who we are and how we do things’. Baier (1986) stated “We inhabit a climate of trust as we inhabit an atmosphere, and notice it only as we notice air when it becomes scarce

or polluted” (p. 234). The experiences of the participants were that follow-through and consistency was another essential element of trust within an effective departmental culture.

Whilst I suspect there was a high level of directional trust from the members of the department towards the Head of Department, this can only be speculated as the research did not produce evidence to substantiate this and only the Heads of Department were interviewed. The findings did indicate that for Heads of Department, being competent, knowledgeable and credible were important components for being considered trustworthy, and this is supported in the literature (Mishra, 1996). I therefore concluded that for most professionals, there is a drive to be trusted and to be trustworthy.

5.5 CHAPTER CONCLUSION

This chapter has discussed the findings from the study, juxtaposing these with the literature. The findings indicated that each of the Heads of Department interviewed developed effective culture because they held a clear vision and communicated philosophy and values. They empowered staff by developing a climate of collaboration, by applying high standards to themselves and others, and by keeping ‘ahead of the game’ through ensuring that they had a national strategic view of forthcoming changes. They managed tensions between dependency and autonomy, between caution and courage, and between maintenance and development. Their focus was always upon the student learning and they remained enthusiastic and committed to personal learning. Their strength was demonstrated in their ambition at all times and quiet determination that it was simply ‘the way we do things around here’.

In the next chapter I present the conclusions and implications of the study and areas for further research.

CHAPTER SIX: CONCLUSIONS AND IMPLICATIONS

*The point is not a set of answers, but making possible a different practice
(Kappeler, 1986, p. 212).*

6.1 INTRODUCTION

The idea to research how Heads of Department lead began with my own leadership experience within the mathematics curriculum, and from an interest in my own professional learning. The objective for this project became, after an initial study, an exploration into how mathematics Heads of Department develop effective culture in their departments. The process of interviews and query/answer conversations highlighted several uniformly shared and vital points; that of giving adequate *time* to developing departmental culture, distributing leadership, increasing the use of conversations for communication, being centred on learners and ensuring a climate of trust.

I now turn to concluding statements and recommendations. Accordingly it is not my intention to repeat in detail the main themes in the literature review, nor the research findings and discussion.

6.2 CONCLUSIONS FROM THE RESEARCH

While theoretical research on organisational culture within corporations is vast, and research on *whole* school culture is similarly available, there has been scant literature to date exploring the individual departmental level. What little literature there is on leadership at department level is not New Zealand based and concentrates on drawing attention to the specific role and qualities needed for Heads of Department to manage an effective subject department. Limited research has been carried out with the specific focus on departmental culture.

This research contributes to the field of leadership at the department level. It concludes that Heads of Department should build the capacity to create and realise

a clear and shared philosophy and vision with effective student learning as the priority. In conjunction with this, departmental initiatives should be examined through the impacts they have on student learning. This conclusion is similar to results emanating from the research on Principals and school culture.

Good communication forms a pivotal element in developing an effective departmental culture. The Heads of Department in this study may not have felt they spent a lot of time thinking about departmental culture, but they did however develop and sustain it on a daily basis through communication. Meetings alone were deemed insufficient, and collegial conversations were a key focus. If the Head of Department understands the basic essentiality of regular non-judgemental communication, he/she will be able to work towards building trust and respect. This is not always easy. Participants in the research agreed that at times a key element in a developing culture was for Heads of Department to identify and bring toxicity to the surface, while at the same time listen, challenge, and wait patiently for more positive sentiments to emerge.

Creating a climate, or ethos, where teachers can develop, was identified as a critical factor. It was important in the Heads of Department role for them to build capacity by strengthening distributed leadership responsibilities and ensuring shared collaboration within their departments. Many of the team-building strategies employed by the contributing Heads of Department were closely related to the ways in which they promoted staff development.

The present research has indicated clearly that while Heads of Department must focus their attention on aspects of curriculum, teacher development, tests, resources and the creation of appropriate management designs that help to get things done, these concerns will not be sufficiently effective if the right culture is not in place.

6.3 IMPLICATIONS OF THE RESEARCH

A number of implications can be suggested from the findings of this research. Firstly, there has been limited professional development in middle

management/leadership for the role of Heads of Department as *leaders* as the attention tends to centre on curriculum, assessment and strategies for student learning. Therefore it would be useful to have more focus on support for Heads of Department in communication and mentoring skills and subjects such as how to encourage and extend teachers as individuals and in groups. Heads of Department experience difficulty in their role of conflict management, and a constant battle with time allocation means that the struggle to try and find personal balance is universal.

This study reinforces previous research which suggests that leadership is bound in context, and whilst it does not lend to direct swapping of ‘do, don’t, should’, discussions about common practices can be helpful. The participants in this research all had previous leadership experience and hence it can be recognised that within a school there are teachers progressing towards becoming future Heads of Department. An induction programme may be a determining factor in their success or failure. Current Heads of Department, in addition to other experienced mentors, can be utilised to bring their varied experiences to professional development opportunities for these future leaders. Just as there is a first time Principals programme in New Zealand, there is potential for a first time Heads of Department programme.

The implications emanating from the research findings point towards how schools need to take into consideration the time Heads of Department need to maximise effective departmental culture in order to help build a powerful learning culture that traverses and connects all levels within the school.

6.4 LIMITATIONS AND AREAS OF FURTHER RESEARCH

The limitations of this research need to be discussed in order to put the conclusions and recommendations into context. Firstly, themes extrapolated from small scale qualitative research can only ever be tentative, and it was not intended in this case to reveal universal laws that can be applied to a multitude of situations. This research involved five case studies intentionally limited to state co-educational schools with between 700 and 1800 students. There may be a

difference in the development of subcultures in small schools, single sex schools, Kura and private schools. Broader research repeated over time might accumulate knowledge and deepen understanding to the point where generalisations can be developed.

Secondly, concentrating only on those departments which had effective culture meant there was not the contrasting view from less effective departments. Research involving toxic cultures could provide useful consideration for future staffing. For instance if a department had an existing culture that is toxic then is appointing externally a Head of Department more successful compared with promoting internally?

Thirdly, by focusing on the experiences of Heads of Department and not the views of teachers within the mathematics departments or other leaders in the school, it was possible that the participants would attribute their success to departmental rather than to whole-school features. However the participants themselves are the only ones uniquely positioned to comment on their experiences as Head of Department of building departmental culture. Research including teachers within the department could be conducted to draw out further aspects, such as the role of trust in developing departmental culture.

This study offers one small contribution to the field. While some essence has been extracted from the interviews, I have been mindful of the richness that remains. The importance of departmental culture should not be underestimated.

It is fitting that one of the research participants, Anna, should have the final word with a whakatauki she referred to:

E tu kahikatea
Hei whakapai ururoa
Awhi mai awhi atu
Tatou tatou e

When translated into English this reads:

Stand like the kahikatea (tree)

To brave the storms
Embrace one another
We are one together

Anna explained that to her this meant; “the Kahikatea are tall, beautiful trees with roots so shallow that individually they cannot stand up against the wind. The only way they survive is by inter-twining to support each other. That is [the departmental culture] I have tried to build.”

REFERENCES

- Adey, K. (2000). Professional development priorities: The view of middle managers in secondary schools. *Educational Management and Administration*, 28(4), 419-431. doi:10.1177/0263211X000284005
- Aitken, P. (2007). "Walking the talk": The nature and role of leadership culture within organisation culture/s. *Journal of General Management*, 32(4), 17-37. Retrieved from <http://www.braybrooke.co.uk/dynamic/viewarticle.php?articleid=115>
- Albert, S., Ashforth, B., & Dutton, J. (2000). Organizational identity and identification: Charting new waters and building new bridges. *The Academy of Management Review*, 25(1), 13-17. Retrieved from <http://www.aomonline.org/>
- Allen, N., & Meyer, J. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63(1), 1-18. doi:10.1111/j.2044-8325.1990.tb00506.x
- Allum, J. (2005). The role of the head of department. *Independence*, 31(1), 14-15. Retrieved from <http://camberwellgirls.net/pd/wp-content/uploads/2008/04/article-the-role-of-the-head-of-department.pdf>
- Alvesson, M. (2002). *Understanding organisational culture*. London, England: Sage.
- Arksey, H., & Knight, P. (1999). *Interviewing for social scientists*. London, England: Sage.

- Baier, A. (1986). Trust and antitrust. *Ethics*, 96(2), 231-260. Retrieved from <http://www.jstor.org/stable/2381376>
- Bascia, N., & Hargreaves, A. (Eds.). (2000). *The sharp edge of educational change: Teaching, leading, and the realities of reform*. London, England: Routledge.
- Basit, T. (2010). *Conducting research in educational contexts*. New York, NY: Continuum International Publishing Group.
- Bassey, M. (1999). *Case study research in educational settings*. Buckingham, England: Open University Press.
- Bell, L. (1992). *Managing teams in secondary schools*. London, England: Routledge.
- Bennett, N., Crawford, M., & Cartwright, M. (2003). *Effective educational leadership*. London, England: Paul Chapman Publishing.
- Bennis, W., & Nanus, B. (2003). *Leaders: The strategies for taking charge*. New York, NY: Harper & Row.
- Bennis, W., Goleman, D., O'Toole, J., & Biederman, P. (2008). *Transparency: How leaders create a culture of candor*. San Francisco, CA: Jossey-Bass.
- Berliner, D. (2002). Educational research: The hardest science of all. *American Educational Research Association*, 31(8), 18-20.
doi:10.3102/0013189X031008018
- Blanchard, K., & O'Connor, M. (1997). *Managing by values*. San Francisco, CA: Berrett-Koehler.
- Bogdan, R., & Biklen, S. (2007). *Qualitative research for education: An introduction to theories and methods*. Boston, MA: Pearson Education.

- Boyer, E. (1983). *High school: A report on secondary education in America*. New York, NY: Harper & Row.
- Branson, C. (2007). Effects of structured self-reflection on the development of authentic leadership practices among Queensland primary school principals. *Educational Management Administration & Leadership*, 35(2), 225-246. doi:10.1177/1741143207075390
- Brooks, J., & Normore, A. (2010). Educational leadership and globalization: Literacy for a global Perspective. *Educational Policy*, 24(1), 52-82. doi:10.1177/0895904809354070
- Brown, A. (1992). Organizational culture: The key to effective leadership and organizational development. *Leadership & Organization Development Journal*, 13(2), 3-6. doi:10.1108/01437739210009545
- Brown, M., Rutherford, D., & Boyle, B. (2000). Leadership for school improvement: The role of the Head of Department in UK secondary schools. *School Effectiveness and School Improvement*, 11(2), 237-258. doi:10.1076/0924-3453(200006)11:2;1-Q;FT237
- Bryk, A., & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York, NY: Russell Sage Foundation.
- Burns, R. (2000). *Introduction to research methods* (4th ed.). Sydney, NSW, Australia: Pearson Education Australia.
- Burton, D., & Bartlett, S. (2009). *Key issues for education researchers*. Thousand Oaks, CA: Sage.
- Busher, H. (2006). *Understanding educational leadership: People, power and culture*. Columbus, OH: Open University Press.

- Busher, H., & Barker, B. (2003). The crux of leadership: Shaping school culture by contesting the policy contexts and practices of teaching and learning. *Educational Management Administration & Leadership*, 31(1), 51-65. doi:10.1177/0263211X030311004
- Busher, H., & Harris, A. (1999). Leadership of school subject areas: Tensions and dimensions of management in the middle. *School Leadership & Management*, 19(3), 305-317. doi:10.1080/13632439969069
- Clark, B. (1980). *Academic culture*. New Haven, CT: Yale Higher Education Research Group.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). London, England: Routledge.
- Collier, J., Dinham, S., Brennan, K., Deece, A., & Mulford, D. (2002). Perceptions and reality of the work of the secondary head of department. *Leadership in Schools*, 30(2), 17-26. Retrieved from <http://www.educationpublishing.com/>
- Creswell, J. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Education.
- Daly, A., & Chrispeels, J. (2008). A question of trust: Predictive conditions for adaptive and technical leadership in educational contexts. *Leadership and Policy in Schools*, 7(1), 30-63. doi:10.1080/15700760701655508
- Dandridge, T., Mitroff, I., & Joyce, W. (1980). Organizational symbolism: A topic to expand organizational analysis. *Academy of Management Review*, 5(1), 77-82. Retrieved from <http://www.jstor.org/stable/257806>

- Davis, W., & Gardner, W. (2004). Perceptions of politics and organizational cynicism: An attributional and leader-member exchange perspective. *The Leadership Quarterly*, 15(4), 439-465. doi:10.1016/j.leaqua.2004.05.002
- Deal, T. (1985). The symbolism of effective schools. *The Elementary School Journal*, 85(5), 601-620. Retrieved from <http://www.jstor.org/stable/1001515>
- Deal, T., & Kennedy, A. (1983). Culture and school performance. *Educational Leadership*, 40(5), 14-15. Retrieved from <http://www.ascd.org/publications/educational-leadership.aspx>
- Deal, T., & Kennedy, A. (2000). *Corporate Cultures: The rites and rituals of corporate life*. Cambridge, MA: Perseus.
- Deal, T., & Peterson, K. (2009). *Shaping school culture: Pitfalls, paradoxes, & promises* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Deece, A. (2003). The leadership capabilities and decision making of the secondary head of department. *Leading and Managing*, 9(1), 38-51. Retrieved from <http://www.acel.org.au/index.php?id=993>
- Denzin, N., & Lincoln, Y. (2005). *The sage handbook of qualitative research*. Thousand Oaks, CA: Sage.
- Dinham, Stephen, Brennan, K., Collier, J., Deece, A., & Mulford, D. (2000). The secondary head of department: Key link in the quality teaching and learning chain. *Quality Teaching Series*, 2, 1-35. Retrieved from http://works.bepress.com/stephen_dinham/45/
- Dirks, K., & Ferrin, D. (2001). The role of trust in organizational settings. *Organization Science*, 12(4), 450-467. doi:1047-7039/01/1204/0450/\$05.00

- Donmoyer, R. (2006). Take my paradigm... please! The legacy of Kuhn's construct in educational research. *International Journal of Qualitative Studies in Education*, 19(1), 11-34. doi:10.1080/09518390500450177
- Drew, C., Hardman, M., & Hosp, J. (2008). *Designing and conducting research in education*. Thousand Oaks, CA: Sage.
- DuFour, R. (2002). The learning centered principal. *Educational Leadership*, 59(8), 12-15. Retrieved from http://cursa.ihmc.us/rid=1206976613786_1901503955_1669/DuFour-%20Learning%20Centered%20Principal.pdf
- Dyer, W. (1982). Culture in organizations: A case study. Presented at the Massachusetts Institute of Technology, Cambridge, MA. Retrieved from <http://hdl.handle.net/1721.1/47094>
- Dyson, A., & Todd, L. (2010). Dealing with complexity: Theory of change evaluation and the full service extended schools initiative. *International Journal of Research & Method in Education*, 33(2), 119-134. doi:10.1080/1743727X.2010.484606
- Earley, P., & Fletcher-Campbell, F. (1989). *The time to manage? Department and faculty heads at work*. Windsor, England: NFER-Nelson.
- Ehlers, U. (2009). Understanding quality culture. *Quality Assurance in Education*, 17(4), 343-363. doi:10.1108/09684880910992322
- Eisenhart, M. (1998). On the subject of interpretive reviews. *Review of Educational Research*, 68(4), 391-399. Retrieved from <http://www.jstor.org/stable/1170731>
- English, F. (Ed.). (2005). *The sage handbook of educational leadership: Advances in theory, research, and practice*. Thousand Oaks, CA: Sage.

- Erickson, F. (1985). Qualitative methods in research on teaching. *Handbook of research on teaching* (3rd ed., pp. 119-161). New York, NY: Macmillan.
- Freire, P. (1974). *Education for critical consciousness*. London, England: Sheed and Ward.
- Frost, D, & Durrant, J. (2003). Teacher leadership: Rationale, strategy and impact. *School Leadership & Management*, 23(2), 173-176.
doi:10.1080/136324303200009140
- Frost, David. (2004). Resisting the juggernaut: Building capacity through teacher leadership in the spite of it all. *Leading and Managing*, 10(2), 70-87.
Retrieved from <http://trove.nla.gov.au/work/153088491>
- Fullan, M. (2001). *Leading in a culture of change*. San Francisco, CA: Jossey Bass.
- Fullan, M. (2003). *Moral imperative of school leadership*. Thousand Oaks, CA: Corwin Press.
- Fullan, M. (2008). The six secrets of change. *Scholastic Administrator*, 7(8), 59.
Retrieved from <http://www.scholastic.com/administrator/>
- Gagliardi, P. (1986). The creation and change of organizational cultures: A conceptual framework. *Organization Studies*, 7(2), 117-134.
doi:10.1177/017084068600700203
- Geertz, C. (1973). *The interpretation of cultures: Selected essays*. New York, NY: Basic Books.
- Gemmill, H. (1991). *Understanding organizational culture through the employee experience*. University of Alberta, Alberta, Canada.
- Gergen, K. (2009). *An invitation to social construction* (2nd ed.). London, England: Sage.

- Ghamrawi, N. (2010). No teacher left behind: Subject leadership that promotes teacher leadership. *Educational Management, Administration & Leadership*, 38(3), 304-320. doi:10.1177/1741143209359713
- Gibson, W., & Brown, A. (2009). *Working with qualitative data*. London, England: Sage.
- Glover, D., Gleeson, D., Gough, G., & Johnson, M. (1998). The meaning of management. The development needs of middle managers in secondary schools. *Educational Management and Administration*, 26(3), 279-292. doi:10.1177/0263211X98263006
- Goleman, D., Boyatzis, R., & McKee, A. (2002). *The new leaders: Transforming the art of leadership into the science of results*. London, England: Little Brown.
- Greenleaf, R. (2002). *Servant Leadership: A journey into the nature of legitimate power and greatness*. New York, NY: Paulist Press.
- Griffiee, D. (2005). Research tips: Interview data collection. *Journal of Developmental Education*, 28(3), 36-37. Retrieved from <http://www.ncde.appstate.edu>
- Grossman, P., & Stodolsky, S. (1994). Consideration of content and the circumstances of secondary school teaching. *Review of Research in Education*, 20(1), 179-221. doi:10.3102/0091732X020001179
- Guba, E., & Lincoln, Y. (1989). *Fourth generation evaluation*. London, England: Sage.
- Gudykunst, W. (2004). *Bridging differences: Effective intergroup communication* (4th ed.). Thousand Oaks, CA: Sage.

- Habermas, J. (1979). *Communication and the evolution of society*. Boston, MA: Beacon Press.
- Handy, C., & Aitken, R. (1986). *Understanding schools as organizations*. Harmondsworth, England: Penguin.
- Hannay, L., & Ross, J. (1999). Department heads as middle managers? Questioning the black box. *School Leadership & Management*, 19(3), 345-358. doi:1080/13632439969096
- Hargreaves, A. (1994). *Changing teachers, changing times: teachers' work and culture in the postmodern age*. London, England: Cassell.
- Hargreaves, A., & Goodson, I. (2006). Educational change over time? The sustaining and nonsustainability of three decades of secondary school change and continuity. *Educational Administration Quarterly*, 42(3), 3-41. doi:10.1177/0013161X05277975
- Harris, A. (2001). Department improvement and school improvement: A missing link? *British Educational Research Journal*, 27(4), 477-487. doi:10.1080/01411920120071470
- Harris, A. (2003). Teacher leadership as distributed leadership: Heresy, fantasy or possibility? *School Leadership & Management*, 23(3), 313-324. doi:10.1080/1363243032000112801
- Harris, A. (2004). Departmental effectiveness and school effectiveness: Exploring the missing link. *Journal for Effective Schools*, 3(1), 35-41. Retrieved from <http://www.effectiveschoolsjournal.org/>
- Harris, A. (2009). *Distributed leadership: different perspectives*. London, England: Springer.

- Harris, A., & Muijs, D. (2005). *Improving schools through teacher leadership*. Berkshire; England: Open University Press.
- Harris, A., Jamieson, I., & Russ, J. (1995). A study of “effective” departments in secondary schools. *School Organisations*, 15(3), 283-299.
doi:10.1080/0260136950150306
- Heshusius, L. (1994). Freeing ourselves from objectivity: Managing subjectivity or turning toward a participatory mode of consciousness? *Educational Researcher*, 23(3), 15-22. doi:10.3102/0013189X023003015
- Hesselbein, F. (1999). The key to cultural transformation. *Leader to Leader*, 1999(12), 1-7. doi:10.1002/ltl.40619991201
- Hofstede, Geert, Hofstede, G., & Minkov, M. (2010). *Cultures and organizations software of the mind*. New York, NY: McGraw-Hill.
- Hofstede, Geert, & Hofstede, G. (2005). *Cultures and organizations: Software of the mind*. New York, NY: McGraw-Hill.
- Hofstede, Geert, Neuijen, B., Ohayv, D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative Science Quarterly*, 35(2), 286-316. Retrieved from <http://links.jstor.org/sici?sici=0001-8392%28199006%2935%3A2%3C286%3AMOCAQA%3E2.0.CO%3B2-8>
- Houtte, M. (2006). Tracking and teacher satisfaction: Role of study culture and trust. *The Journal of Educational Research*, 99(4), 247-254.
doi:10.3200/JOER.99.4.247-256

- Husen, T. (1997). Research paradigms in education. In J. P. Keeves (Ed.), *Educational research, methodology and measurement: An international handbook* (pp. 17-21). Oxford, England: Pergamon.
- Johnson, R., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. doi:10.3102/0013189X033007014
- Kappeler, S. (1986). *The pornography of representation*. Cambridge, England: Polity Press.
- Kerry, T. (2005). The evolving role of the head of department. *London Review of Education*, 3(1), 65-80. doi:10.1080/14748460500036284
- Kezar, A., & Eckel, P. (2002). The effect of institutional culture on change strategies in higher education: Universal principles or culturally responsive concepts? *The Journal of Higher Education*, 73(4), 435-460. doi:10.1353/jhe.2002.0038
- Kohm, B. (2002). Improving faculty conversations. *Educational Leadership*, 59(8), 31-33. Retrieved from <http://www.ascd.org/publications/educational-leadership.aspx>
- Kotzur, T. (2006). What makes a great subject department? *Independence*, 31(1), 31-32. Retrieved from <http://www.ahisa.edu.au/>
- Kouzes, J., & Posner, B. (2007). *The leadership challenge*. San Francisco, CA: Jossey-Bass.
- Krishnamurti, J. (1967). *Talk at Saanen*. Saanen. Retrieved from <http://www.jiddu-krishnamurti.net/en/1967/1967-07-09-jiddu-krishnamurti-1st-public-talk>

- Kuhn, T. (1996). *The structure of scientific revolutions* (3rd ed.). Chicago, IL: The University of Chicago Press.
- Kunda, G. (2006). *Engineering culture: Control and commitment in high-tech corporation*. Philadelphia, PA: Temple University Press.
- Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing* (2nd ed.). Los Angeles, CA: Sage.
- LaPier, T., & Scherer, S. (2001). Evidence based practice: When numbers are not enough part II: Evaluating qualitative research studies. *Cardiopulmonary Physical Therapy Journal*, 12(4), 126-130. Retrieved from http://cpptjournal.org/pdfs/members/fulltext/2001/Vol_12_No_4.pdf
- Labaree, D. (2003). The peculiar problems of preparing educational researchers. *Educational Researcher*, 32(4), 13-22. doi:10.3102/0013189X032004013
- Lauterbach, B., Vu, J., & Weisberg, J. (1999). Internal vs. external successions and their effect on firm performance. *Human Relations*, 52(12), 1485-1504. doi:10.1023/A:1016980918820
- Lawrence, A., Anthony, G., & Ding, L. (2009). Teacher learning and pedagogical shifts subsequent to professional development experiences. *New Zealand Journal of Teachers' Work*, 6(2), 136-147. Retrieved from <http://www.teacherswork.ac.nz/twjournal.php>
- Leigh, A., & Maynard, M. (2010). *The perfect leader: All you need to get it right the first time*. London, England: Random House Business Books.
- Leithwood, K. (2002). *Second international handbook of educational leadership and administration* (2nd ed.). AA Dordrecht, The Netherlands: Kluwer Academic.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage.

- Lock, A., & Strong, T. (2010). *Social constructionism: Sources and stirrings in theory and practice*. Cambridge, England: Cambridge University Press.
- Lortie, D. (1975). *Schoolteacher*. Chicago, IL: University of Chicago Press.
- Louis, M. (1980). Surprise and sense making: What new-comers experience in entering unfamiliar organizational settings. *Administrative Science Quarterly*, 25(2), 226-251. Retrieved from <http://www.johnson.cornell.edu/publications/asq/>
- Lutterell, W. (Ed.). (2010). *Qualitative educational research: Readings in reflexive methodology and transformative practice*. New York, NY: Routledge.
- Maassen, P. (1996). The concept of culture and higher education. *Tertiary Education and Management*, 1(2), 153-159.
doi:10.1080/13583883.1996.9966896
- MacTavish, M., & Kolb, J. (2008). An examination of the dynamics of organizational culture and values-based leader identities and behaviors: One company's experience. Presented at the Academy of Human Resource Development International Research Conference, Panama City, FL: N/A.
Retrieved from <http://eric.ed.gov/ERICWebPortal/detail?accno=ED501616>
- Maccoby, M. (2000). Understanding the difference between management and leadership. *Research Technology Management*, 43(1), 57-59. Retrieved from <http://www.iriinc.org>
- Mackenzie, N., & Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. *Issues in Educational Research*, 16(2), 193-205. Retrieved from <http://www.iier.org.au/iier16/mackenzie.html>

- Marland, M. (1971). *Head of department: Leading a department in a comprehensive school*. London, England: Heinemann Educational Books.
- Mathieu, J. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171. doi:10.1037/0033-2909.108.2.171
- McLaughlin, M., & Talbert, J. (2001). *Professional communities and the work of high school teaching*. Chicago, IL: University of Chicago Press.
- McLaughlin, M. (1987). Learning from experience: Lessons from policy implementation. *Educational Evaluation and Policy Analysis*, 9(2), 171-178. doi:10.3102/01623737009002171
- Mishra, A. (1996). Organizational responses to crisis. The centrality of trust. *Trust in organizations. Frontiers of theory and research*. California: Sage.
- Moore, F. (2007). Language in science education as a gatekeeper to learning, teaching, and professional development. *Journal of Science Teacher Education*, 18(2), 319-343. doi:10.1007/s10972-007-9040-0
- Morgan, G. (2006). *Images of organization*. Thousand Oaks, CA: Sage.
- Murphy, J., Goldring, E., Cravens, X., Elliott, S., & Porter, A. (2007). The vanderbilt assessment of leadership in education: Measuring learning-centered leadership. *East China Normal University Journal*. Retrieved from http://www.valed.com/documents/8_VALED_Measuring_Learning_Centered_updated%20April%202011.pdf
- Mutch, C. (2005). *Doing educational research: A practitioners guide to getting started*. Wellington, New Zealand: NZCER.

- Nash, R., & Harker, R. (1998). *Making progress: Adding value in secondary education*. Palmerston North, New Zealand: ERDC Press, Massey University.
- Nias, J., Southworth, G., & Yeomans, R. (1989). *Staff relationships in the primary school: A study of organizational cultures*. London, England: Cassell.
- Nisbet, J. (2005). What is educational research? Changing perspectives through the 20th century. *Research papers in education*, 20(1), 25-44.
doi:10.1080/0267152052000341327
- Otero, G., & West-Burnham, J. (2007). Educational leadership and social capital. Presented at the International Leadership Institute, Hamilton, New Zealand. Retrieved from
http://achievingderry.com/resources/110/69_110_35_Educational%20Leadership%20and%20Social%20Capital.pdf
- Ouchi, W. (1981). *Theory Z: How American business can meet the Japanese challenge* (9th ed.). Reading, MA: Addison-Wesley.
- O'Neill, J. (2000a). "So that I can more or less get them to do things they really don't want to." Capturing the "situated complexities" of the secondary school Head of Department. *Journal of Educational Inquiry*, 1(1), 13-34.
Retrieved from <http://www.education.unisa.edu.au/JEE>
- O'Neill, J. (2000b). Secondary school "effectiveness" and "improvement."
Management in Education, 14(3), 15-17.
doi:10.1177/089202060001400306
- Perkins, D. (1993). Thinking-centered learning. *Educational Leadership*, 51(4), 84-85. Retrieved from <http://www.ascd.org/publications/educational-leadership.aspx>

- Peters, T., & Waterman, R. (1982). *In search of excellence: Lessons from America's best-run companies*. New York, NY: Harper & Row.
- Pettigrew, A. (1979). On studying organizational cultures. *Administrative Science Quarterly*, 24(4), 570-581. Retrieved from <http://www.jstor.org/stable/2392363>
- Pierce, C. (2007). Designing intelligent knowledge: Epistemological faith and the democratization of science. *Educational Theory*, 57(2), 123-140.
doi:10.1111/j.1741-5446.2007.00248.x
- Plakhotnik, M., & Rocco, T. (2011). What do we know, how much, and why it matters: Organizational culture and AHRD research 1994-2009. *Human Resource Development Review*, 10(1), 74-100.
doi:10.1177/1534484310388992
- Poppleton, P., & Williamson, J. (Eds.). (2004). *New realities of secondary teachers' work lives*. Oxford, England: Symposium Books.
- Putnam, R. (Ed.). (2002). *Democracies in flux: The evolution of social capital in contemporary society*. Oxford, England: Oxford University Press.
- Reinharz, S. (1992). *Feminist methods in social research*. New York, NY: Oxford University Press.
- Rist, R. (1977). On the relations among educational research paradigms: From disdain to detente. *Anthropology & Education Quarterly*, 8(2), 42-49.
doi:10.1525/aeq.1977.8.2.05x1394p
- Rosenfeld, P., Ehrich, L., & Cranston, N. (2008). Changing roles of heads of department: A Queensland case (pp. 1-17). Presented at the Australian Association for Research Education Conference, Brisbane, QLD,

- Australia: Queensland University of Technology. Retrieved from <http://eprints.qut.edu.au/19129/1/c19129.pdf>
- Rubin, H., & Rubin, I. (2005). *Qualitative interviewing: The art of hearing data* (2nd ed.). Thousand Oaks, CA: Sage.
- Rule, P. (2004). Dialogic spaces: Adult education projects and social engagement. *International Journal of Lifelong Education*, 23(4), 319.
doi:10.1080/026037042000233476
- Sackman, S. (1991). *Cultural knowledge in organizations: Exploring the collective mind*. Newbury Park, CA: Sage.
- Saffold, G. (1988). Culture traits, strength, and organisational performance: Moving beyond “strong” culture. *Academy of Management Review*, 13(4), 546-558. Retrieved from <http://www.jstor.org/stable/258374>
- Sammons, P., Thomas, S., & Mortimore, P. (1997). *Forging links: Effective schools and effective departments*. London, England: Paul Chapman.
- Schein, E. (1983). The role of the founder in creating organizational culture. *Organizational Dynamics*, 12(1), 13-28. Retrieved from <http://www.elsevier.com/locate/orgdyn>
- Schein, E. (2004). *Organizational culture and leadership* (3rd ed.). San Francisco, CA: Jossey-Bass.
- Scherer, S., & LaPier, T. (2001). Evidence Based Practice: When numbers are not enough part I: Understanding qualitative research methods. *Cardiopulmonary Physical Therapy Journal*, 12(4), 123-125. Retrieved from http://cpptjournal.org/pdfs/members/fulltext/2001/Vol_12_No_4.pdf
- Schermerhorn, J., Hunt, J., Osborn, R., & Uhl-Bien, M. (2010). *Organizational Behavior* (11th ed.). Hoboken, N.J.: John Wiley & Sons.

- Schwartz, H., & Davis, H. (1981). Matching corporate culture and business strategy. *Organizational Dynamics*, 10(1), 30-48. Retrieved from <http://www.journals.elsevier.com/organizational-dynamics/#description>
- Schön, D. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.
- Senge, P. (1990). The leader's new work: Building learning organizations. *Sloan Management Review*, 32(1), 7-23. Retrieved from <http://sloanreview.mit.edu/>
- Senge, P. (2010). *Fifth discipline: The art and practice of the learning organization*. London, England: Random House Business.
- Sergiovanni, T. (2000). *The lifeworld of leadership: Creating culture, community, and personal meaning in our schools*. San Francisco, CA: Jossey-Bass.
- Sergiovanni, T. (2001). *Leadership: What's in it for schools?* London, England: Routledge Falmer.
- Sergiovanni, T. (2007). *Rethinking leadership: A collection of articles*. Thousand Oaks, CA: Corwin.
- Shank, M. (2005). Common space, common time, common work. *Educational Leadership*, 62(8), 16-19. Retrieved from <http://www.ascd.org/publications/educational-leadership.aspx>
- Shields, C. (2009). Transformative leadership: A call for difficult dialogue and courageous action in racialised contexts. *International Studies in Educational Administration*, 37(3), 53-68.
doi:10.1177/0013161X03258963
- Silver, H. (2003). Does a university have a culture? *Studies in Higher Education*, 28(2), 157-169. doi:10.1080/0307507032000058118

- Siskin, L. (1991). Departments as different worlds: Subject subcultures in secondary schools. *Educational Administration Quarterly*, 27(2), 134-160.
doi:10.1177/0013161X91027002003
- Siskin, L. (1994). *Realms of knowledge: Academic departments in secondary schools*. Washington, DC: Falmer Press.
- Smircich, L. (1983). Concepts of culture and organisational analysis. *Administrative Science Quarterly*, 28(3), 339-358. Retrieved from <http://www.johnson.cornell.edu/publications/asq/>
- Song, J., Kim, H., & Kolb, J. (2009). The effect of learning organization culture on the relationship between interpersonal trust and organizational commitment. *Human Resource Development Quarterly*, 20(2), 147-167.
doi:10.1002/hrdq.20013
- Southworth, G. (2002). Instructional leadership in schools: Reflections and empirical evidence. *School Leadership & Management*, 22(1), 73-91.
doi:10.1080/13632430220143042
- Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management Decision*, 39(7), 551-556. doi:10.1108/EUM0000000005801
- Stoll, L. (1998). School culture. *School Improvement Networks Bulletin*, 9(3), 9-14. Retrieved from http://scholar.googleusercontent.com/scholar?q=cache:zKNQ27qXwHYJ:scholar.google.com/+school+culture+louise+stoll&hl=en&as_sdt=0,5
- Stolp, S. (1994). Leadership for school culture. *ERIC Clearinghouse on Educational Management*, 1-5. Retrieved from <http://hdl.handle.net/1794/3312>

- Thurmond, V. (2001). The point of triangulation. *Journal of Nursing Scholarship*, 33(3), 253-258. doi:10.1111/j.1547-5069.2001.00253.x
- Timperley, H. (2006). Learning challenges involved in developing leading for learning, 34(4), 546. doi:10.1177/1741143206068217
- Tolich, M. (Ed.). (2001). *Research ethics in Aotearoa New Zealand*. Auckland, New Zealand: Pearson Education.
- Turner, C. (2000). Learning about leading a subject department in secondary schools: Some empirical evidence. *School Leadership & Management*, 20(3), 299-313. doi:10.1080/13632430050128336
- Turner, J. (1988). *A theory of social interaction*. Palo Alto, CA: Stanford University Press.
- Tyack, D. (1974). *The one best system: A history of American urban education*. Cambridge, MA: Harvard University Press.
- University of Waikato. (2007). University of Waikato Human Research Ethics Regulations. Retrieved from <http://calender.waikato.ac.nz/assessment/humanresearchethics.htm>
- Van Maanen, J. (2011). *Tales of the field: On writing ethnography* (2nd ed.). Chicago, IL: The University of Chicago Press.
- Wenger, E. (2000). Communities of practice and social learning systems. *Organization*, 7(2), 225-246. doi:10.1177/135050840072002
- Wenglinsky, H. (2002). How schools matter: The link between teacher classroom practices and student academic performance. *Education Policy Analysis Archives*, 10(Feb), 1-30. Retrieved from <http://epaa.asu.edu/epaa/v10n12/>
- Westoby, A. (Ed.). (1988). *Culture and power in educational organizations*. Milton Keynes, England: Open University Press.

- Wiliam, D. (2008). What should education research do, and how should it do it?
Educational Researcher, 37(7), 432-438. doi:10.3102/0013189X08325678
- Wilkins, A., & Ouchi, W. (1983). Efficient cultures: Exploring the relationship
between culture and organizational performance. *Administrative Science
Quarterly*, 28(3), 468-481. Retrieved from
<http://www.jstor.org/stable/2392253>
- Woods, P. (2004). Democratic leadership: Drawing distinctions with distributed
leadership. *International Journal of Leadership in Education*, 7(1), 3-26.
doi:10.1080/1360312032000154522
- Wragg, E. (1978). *Conducting and analysing interviews*. Oxfordshire, England:
TRC-Rediguides.
- Wright, N. (2002). *Stories from the inside: A narrative analysis investigating the
professional lives of three NZ secondary school heads of English
departments*. University of Waikato, Hamilton, New Zealand.
- Yoder-Wise, P., & Kowalski, K. (2006). *Beyond leading and managing: Nursing
administration for the future*. Philadelphia, PA: Mosby.
- Yukl, G. (2010). *Leadership in Organizations* (7th ed.). Upper Saddle River, NJ:
Pearson.
- Zand, D. (1997). *The leadership triad: Knowledge, trust, and power*. New York,
NY: Oxford University Press.

APPENDICES

Appendix A: Letter to Secondary School Mathematics Advisors

June 2011

Dear Secondary Mathematics Advisor,

I am currently completing a Masters of Educational Leadership at the University of Waikato which involves a research study. The purpose of my research is to explore how heads of mathematics faculties develop and evolve effective culture within their departments.

My research focuses on the experiences of heads of mathematics departments and I am seeking your help to build a list of approximately 40 mathematics departments where the Head of Department promotes the success of all students by advocating, nurturing, and sustaining a departmental culture and an instructional program conducive to student learning and staff professional growth. Departments with effective cultures display internal cohesion that makes it easier for teachers to teach, students to learn and for parents, administrators, and others to contribute to the instructional process.

I am asking each secondary mathematics advisor to suggest four schools from within their region that they believe show the following criteria.

- A clear and shared vision translated down to the level of the classroom.
- High levels of trust.
- Productive communication with a combination of top-down and bottom up interaction/collaboration.
- Low staff turnover and absenteeism.

- Engaged in professional growth with a focus on seeking new and better ways of engaging students in learning.

From this I will randomly select five schools where I will ask permission to interview the mathematics Head of Department.

If you have any queries about this request, please contact me at the following email address: lmbrassington@gmail.com. I have two supervisors from the University of Waikato who are assisting and supporting me throughout this research process. They are Mr Jeremy Kedian (kedian@waikato.ac.nz) and Mrs Michele Morrison (mmorris@waikato.ac.nz). Should you have any concerns throughout the research process you are able to contact them directly by e-mail or by telephone 07 838 4500.

I sincerely thank you for your help and look forward to your response.

Yours sincerely,

Lyn Brassington

Appendix B: Invitation letter to the Mathematics Head of Department

June 2011

Dear Mathematics Head of Department,

I would like to invite you to be part of a Masters of Educational Leadership research study I am conducting this year at the University of Waikato. The focus is centred on how heads of mathematics faculties develop and evolve effective culture within their departments. For this study an effective culture is where the success of all students is promoted by advocating, nurturing, and sustaining a department and an instructional program conducive to student learning and staff professional growth.

My research is experience based and I am informed by the maths advisors that your views, thoughts, and experiences would be of particular value. To gather data the research will involve five participant Mathematics HODs taking part in a one-on-one, face to face semi-structured interview for approximately 60 minutes that will be centred on the following research questions:

- What experiences have influenced how you have developed the culture of your department?
- What 'practices' promoted by you have gone towards developing an effective culture within your department?

I also want to gather some written data: departmental handbook and minutes of meetings.

I am currently employed at a secondary school in New Zealand and am acutely aware and fully acknowledge how busy schools leaders are at any time of the year. However I am hoping that you will consider being part of this research project. I have attached an information sheet and a consent form. I would be

grateful if you would read these documents, which clarify information regarding the research project and your involvement.

If you are willing to be part of this study an interview will be held which will take 45-60 minutes and be audio-recorded and transcribed. A copy of the transcript will be sent to you to ensure I have correctly transcribed your conversation. All information gathered will remain private and confidential, and your identity will not be disclosed.

If you have any queries about this request, please contact me at the following email address: lmbrassington@gmail.com. I have two supervisors from the University of Waikato who are assisting and supporting me throughout this research process. They are Mr Jeremy Kedian (kedian@waikato.ac.nz) and Mrs Michele Morrison (mmorris@waikato.ac.nz). Should you have any concerns throughout the research process, you are able to contact them directly by e-mail or by telephone 07 838 4500.

I will contact you within the next two weeks to ask about your willingness to participate and to answer any further questions you may have. If you are willing to proceed we can arrange a suitable time and venue for the interview, and I will look forward to receiving your signed consent form.

Thank you for your consideration of my request.

Yours sincerely,

Lyn Brassington

Appendix C: Participant Information Sheet

Project Title

A consideration of processes by which mathematics Heads of Faculty develop effective culture within their departments?

Background

I am undertaking this research as part of my Master of Educational Leadership qualification. I am studying in the Faculty of Education at the University of Waikato and I am supervised by Mr Jeremy Kedian and Mrs Michele Morrison. The information gathered from this study will be of value to current and aspiring leaders of faculty by offering insights around developing and evolving a supportive departmental culture. Mathematics Heads of Department can utilise this for self-reflection and then decide whether or not to transfer the results and insights to their own settings. In addition, the findings of this study will have the potential to assist training programmes designed for aspiring and currently employed mathematics Heads of Departments.

Aim

The aim of this research is to explore how mathematics Heads of Department develop and evolve effective culture in a secondary school department. I am interested in examining the nature of your educational practice and the personal and professional experiences that have influenced your leadership style.

Method

For this research I would like to carry out a one-on-one, face to face semi-structured interview. The interview will take approximately 45-60 minutes. This will enable me to hear your opinions, perspectives, and experiences regarding your role as leader of a department and the development and maintenance of culture within your department.

Your involvement

I believe your thoughts and experiences would be of particular value to this research. For this reason I would like to invite you to participate in the individual interview. The interview will be audio-recorded in order to have an accurate record of your conversation. The recorded interview will be transcribed by the researcher. Before data from the interview is analysed, you will be sent the transcript, which I would like you to check in order to confirm the accuracy of the information. Please note that your participation in this research is entirely voluntary.

Benefits to participants

Most of the benefits will be intangible, consisting of aspects like: sharing experiences, opportunities to reflect on your practice and further develop your understanding of your HOD role, contributing to researched knowledge about the HOD role in New Zealand secondary schools.

Participant's rights

All prospective participants have the right:

- To decline to participate in the research and/or related activities or any portion or part of these,
- To know the form in which the findings will be published,
- To know the duration and security of data storage,
- To withdraw any information they have provided up until formal analysis has commenced on their data,
- To access and correct personal information,
- To know the process for withdrawing information they have provided,
- To ask questions about the study at any time during participation.

Confidentiality

Your right to confidentiality will be respected during the research process. All the information you provide will remain private and confidential and will not be shared with anyone other than the supervisors. Unless your permission is obtained, your identity will not be disclosed in the final report or any other report

produced in the course of this research. For further information refer to University of Waikato Ethics Websites provided below.

<http://www.waikato.ac.nz/official-info/index/Ethics-Matters>

<http://calendar.waikato.ac.nz/assessment/ethicalConduct.html>

Archiving of data, privacy, storage and destruction of data.

All non-identifying data (e.g., data sets and transcripts) used for publication will be securely kept for at least five years. Identifying data such as consent forms, photographs and videos will be securely stored consistent with agreements made under section 9(4)(a) of Ethical Conduct in Human Research and Related Activities Regulations 2008.

Data will not be made available to persons or for purposes that are not named on the application. For further information refer to University of Waikato Ethics Websites provided below.

<http://www.waikato.ac.nz/official-info/index/Ethics-Matters>

<http://calendar.waikato.ac.nz/assessment/ethicalConduct.html>

Use of the information

The data gathered will be used for the purpose of fulfilling the requirements of a Master of Educational Leadership Thesis, and as the basis of possible future conference presentations and journal publications. The thesis may be published or presented. A digital copy of the thesis will be available for public access and a copy of it will be lodged permanently in the University's digital repository: Research Commons.

The results

The results of my research are to be presented as part of my Master's Thesis. In case you are interested in being notified of the final results from this study, you will be provided with an electronic copy of the abstract and the full thesis will be available online.

Thank you for taking the time to read this information sheet and consider this invitation. Please feel free to contact either of my supervisors or me if you have any questions about the research.

Contact details

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Appendix D: Participants Consent Form

Participants Name:

School:

I have read and understand the information sheet and I am willing / I am not willing (please circle one) to take part in this research.

A consideration of processes by which mathematics Heads of Faculty develop effective culture within their departments

Researcher: Lyn Brassington (lbrassington@gmail.com)

Supervisors: Jeremy Kedian (kedian@waikato.ac.nz)

Michele Morrison (mmorris@waikato.ac.nz)

Participants Signature:

Principal's Signature:

Date:

Appendix E: Letter to the School Principal

June 2011

Dear Principal,

I am currently completing a Masters of Educational Leadership Thesis at the University of Waikato which involves a research study of mathematics Heads of Department. The purpose of my research is to explore how heads of mathematics faculties develop and evolve effective culture within their departments. For this study an effective culture is where the success of all students is promoted by advocating, nurturing, and sustaining a department and an instructional program conducive to student learning and staff professional growth.

My research focuses on the experiences of heads of mathematics faculties and the mathematics Head of Department within your school has been recommended to me by the maths advisors as being of particular value. A letter of invite has also been sent to your mathematics Head of Department and I am hoping you will both consent to the mathematics Head of Department participating in this study. While there may not be any direct or immediate benefit to your school, you will be contributing to research that could influence the core practices for development and maintenance of effective departmental cultures.

I am currently employed at a secondary school in New Zealand and I am acutely aware and fully acknowledge how busy school leaders are at any time of the year. However I am hoping that the results of this research may inform departmental leadership development and practice, and enhance effective departmental cultures. Given this, I hope it will be viewed as a strongly beneficial use of the short amount of time required for an interview.

Ethical guidelines will be complied with throughout the research study. The identity of the school and the participating teachers will be kept confidential. The data collected will not be available to any third party. It will be made clear to the

Head of Department that their involvement is voluntary and they may withdraw their participation at any time. A consent form was included with the information sent to the Mathematics HOD for you both to sign.

If you have any questions about this request, please either phone 07 8550604 or 021 0308919 or alternatively contact me at the following email address lmbrassington@gmail.com. I have two supervisors from the University of Waikato who are assisting and supporting me throughout this research process. They are Mr Jeremy Kedian (kedian@waikato.ac.nz) and Mrs Michele Morrison (mmorris@waikato.ac.nz). Should you have any concerns throughout the research process, you are able to contact them directly by e-mail or by telephone 07 838 4500.

I sincerely thank you for your consideration of my request and look forward to your response.

Yours sincerely,

Lyn Brassington

Appendix F: Interview Questions for the Head of Department

Biographical Questions:

1. The interview will begin with some biographical questions to ascertain length of service and other data:
 - For how many years you have been a mathematics Head of Department?
 - How many years you have been the mathematics Head of Department at this school?
 - How many full time teachers are presently within the mathematics department?
 - How many part time teachers are presently within the mathematics department?

Developing Effective Culture:

2. Can you describe what the department was like when you first became head of the department?
3. What do you think the effective culture in your mathematics department looks/feels like?
4. How do you perceive your role in developing an effective culture within your department?
5. What processes or practices have helped to develop the effective culture within this department?

The Evolving of Effective Departmental Culture:

6. How do you perceive your role in the evolving of effective culture within your department?
7. What processes or practices have helped to maintain the effective culture within this department?

8. What experiences have you had which have helped/influenced how you evolve the culture within the department?

9. Every school/department goes through difficult times. What strategies have you employed to ensure the positive culture of the department was maintained (or further strengthened) during any critical incidents?

Appendix G: Return of Transcripts

Date

Dear Head of Department

Enclosed is a transcript of the interview conducted *insert date*. I transcribed the script myself. The text and the back-up copy are saved in a secure locked place. The transcript is verbatim, except for the removal of fillers (umms, ahhs) and unnecessary repetitions. Because it is raw data it does not have the refinements of written language so may seem disjointed in some places. The raw data will be used as short excerpts to highlight key ideas and themes, and it may be rewritten slightly so that it is fluent within an academic text. You will not be identified as the author of the quote.

I would appreciate your reading the transcript and adding, deleting or altering any parts you wish so that it accurately reflects your views. Please make comments on the transcript itself and return it by mail using the envelope enclosed with the accompanying form releasing the transcript for use.

During the next two weeks you are free to withdraw from the research. If you would like to do this please indicate on the release of transcript form. If I have not heard back from you by *insert date* I will assume that you do not wish to make any changes and agree to release the transcript for use.

If you would like to discuss the transcript before returning it, please feel free to contact me.

Yours sincerely

Lyn Brassington

Appendix H: Release of transcript for use

Name of participant:

Pseudonym:

I have received the transcription of the interview and have read it. The following ticked situation applies:

- The transcript is acceptable as raw data provided that the conditions agreed to on the original consent form are met. I have made no alterations.
- I have altered the text of the transcript. Once these changes are made the text is acceptable as raw data providing that the conditions agreed to on the original consent form are met.
- I want to withdraw from the research. Please destroy any data you have collected from me.

Signed: _____

Date: _____