

**Professional development that supports change in teachers'
practice, in the context of a new curriculum**

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ABSTRACT

This study explored the most effective methods of supporting teachers to make sustained change to their practice when implementing a new curriculum. The study examined how the revised New Zealand Curriculum is challenging teachers to change, what professional development approaches are being used to support these changes and which of these approaches are leading to sustained changes.

A qualitative methodology was employed for this research, focusing on three New Zealand secondary schools. Across the three data collection locations, 180 questionnaires were distributed to teachers, semi-structured interviews were undertaken with four senior leaders and three focus groups were carried out with 15 subject leaders.

The major findings from this study indicate that national and school-wide change initiatives are experienced differently by different schools, subject areas and individual teachers. The findings also suggest that evaluation of curriculum implementation journeys tend to focus on the fidelity of implementation, rather than on how the change in curriculum has affected students' learning and achievement.

The findings imply that leaders who are responsible for leading change in educational organisations need to be aware of the context into which they are implementing the change and the existing individual beliefs, knowledge and skills of all those involved. When developing professional development approaches to support change, the findings show that there is a strong regard for workshops that allow time to share ideas with colleagues, together with coaching and mentoring programmes. However, it is clear that one size does not fit all and a combination of professional development approaches are the most effective at achieving sustained change in teachers' beliefs, knowledge, skills and classroom teaching practices.

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CHAPTER ONE

INTRODUCTION

Throughout a teacher's career it is likely that they will experience at least one government mandated curriculum revision or change. Pang (1999) suggests that "curriculum renewal tends to be imposed on teachers from the top such as the Education Department" (p.1). The implementation of a new nationwide school curriculum is an extensive undertaking that involves a wide range of often conflicting factors (Carson, 2008; Cowie & Hipkins, 2009; McLaughlin & Berman, 1975; Pang, 1999). Politically it must be decided who will have a say in the curriculum review, design and implementation process. Philosophically, the curriculum designers must engage with questions regarding the nature of education and what should be learnt in order to prepare students for the modern world and beyond. Practically there are issues to be considered such as what resources will be required and how will staff be inducted and supported throughout the implementation process (Macdonald, 2003; Mclaughlin & Berman, 1975).

Once a new curriculum has been created and established by a government organisation it is then left to senior management teams (SMTs) and ultimately the teachers within a school, to turn the government produced document into a daily functioning reality (Harris, 1977). Throughout a school teacher's career they may experience a number of curriculum implementation initiatives of this kind, which could lead them to make multiple changes to their own beliefs, values and practice (Abrahamson, 2004; Pang, 1999).

In the case of the revised New Zealand Curriculum (Ministry of Education, 2007), the process of review, design, creation and implementation has already lasted over ten years and is ongoing today (Ministry of Education, 2010). In contrast to previous government education policy implementations, both in New Zealand and abroad, the process of implementing the revised New Zealand Curriculum (Ministry of Education, 2007) has been wide-ranging and provided opportunities for thousands of diverse

groups to give input into the final document (Ministry of Education, 2007). The implementation journey began with a stock-take of education in New Zealand that involved thousands of stakeholders including teachers, principals, school boards, academics, education sector bodies, employers, curriculum associations, parents and the wider community. This consultation led to a draft document, further feedback and then finally the publishing of the final document and a three year implementation period (Ministry of Education, 2007).

The final New Zealand Curriculum (Ministry of Education, 2007) document outlined the principles, values, competencies, teaching pedagogies, learning areas and learning objectives that all state schools in New Zealand were required by law to have implemented by 2010 (Cowie & Hipkins, 2009; Education Review Office, 2009; Ministry of Education, 2007; Ministry of Education, 2010). However, the revised curriculum was presented as only a framework from which schools were expected to design and create their own school-based curriculum, thus placing teachers and school leaders in the position of being both curriculum designers and implementers (Ministry of Education, 2010).

Significant differences were evident between the previous New Zealand Curriculum Framework (1993) and the revised New Zealand Curriculum (Ministry of Education, 2007), in particular the focus on inquiry based approaches to both teaching and learning that are key characteristics of the revised document. If teachers in New Zealand schools were not using methods, such as the inquiry-based approach to learning, which were consistent with the elements of the revised New Zealand Curriculum (Ministry of Education, 2007) then they were expected to change what they were doing (Education Review Office, 2009; Ministry of Education, 2007; Ministry of Education, 2010). In reality for most New Zealand educators this did not involve wiping the slate clean and starting afresh, but included reflecting on their current practice and then adapting, building upon and changing what they were currently doing to meet the new requirements (Ministry of Education, 2010). However, this kind of large scale implementation process is challenging and complex (Cardno, 2006; Fullan, 2003; Hall & Hord, 1987; Scott, 1999).

When implementing a new curriculum, the need to professionally develop teachers in response to required changes in practice demanded by a new document is one of the complex challenges faced by school leaders, Powell (2002) states:

When a new curriculum is adopted there are changes in practice that result in improved student learning and attitudes. Yet changes in practice and thinking do not necessarily result simply from providing new knowledge in a professional development context. Rather there is a complex relationship among knowledge, beliefs and practice that is unique for each teacher. (p. 2)

This suggests that all those responsible for implementing a new curriculum must provide professional development that not only introduces the content of a new document, but also provides development that can challenge and change individual teachers' beliefs. How this process is managed will have a profound effect on the way teachers respond to a new curriculum, interpret the document, effect required changes and sustain those changes in the long term (Gregoire, 2003; Richardson, 1996).

As an Assistant Principal in charge of teaching and learning in a secondary school in New Zealand, I have experienced, since October 2007, the implementation of the revised New Zealand Curriculum (Ministry of Education, 2007). The New Zealand Curriculum document (Ministry of Education, 2007) states that "each board of trustees, through the principal and staff, is required to develop and implement a curriculum for students in years 1 – 13" (p. 37). This led me to design and implement a process in which the teaching staff reviewed the current curriculum that was in place and compared what we were doing with the purpose, vision, principles, values, key competencies and learning areas that are outlined in the revised National Curriculum (Ministry of Education, 2007). From the information that we gathered and analysed in this review I then worked with the Heads of Faculties (HOFs) to decide what we would need to maintain, change and develop of our current practice in order to successfully fulfil the intentions of the revised document.

What became clear when we worked through this curriculum review, design and implementation process was that change would need to take place between our previous practice and the expectations of the revised New Zealand Curriculum document (Ministry of Education, 2007), and that these required changes were going to be predominantly focused on teachers' practice. This is confirmed in the Ministry of Education document 'Curriculum Update. What it looks like when it's going well' (Ministry of Education, 2009a), which states that as part of the implementation process "teachers and leaders are encouraged to think about themselves as learners and to reflect on their practice and the ways it might need to change... schools make small changes, bed them in and build on them" (p. 7). From my own previous experience of being a Specialist Classroom Teacher (SCT), which is a teacher coach role, I understood the challenges faced by school leaders, teachers and their coaches when attempting to change practice. Therefore, through my combined experiences of coaching teachers to change their practice and implementing the revised curriculum, I became aware of the immense challenge that schools face when attempting to effect the changes required when fulfilling the needs of a new curriculum.

Since 2007 all New Zealand secondary schools have been engaged in a similar curriculum implementation process. Furthermore, due to the fact that the revised New Zealand Curriculum (Ministry of Education, 2007) document contains some new elements, such as the key competencies and the inquiry-based approach to learning, which did not exist in the previous New Zealand Curriculum Framework (1993), it is likely that all secondary schools and their teachers have experienced the need for some change or development in their practice. Therefore, I believe that research which evaluates the teacher change element of this curriculum implementation process is important and valid. Consequently, this study sets out to evaluate the methods that have been adopted by SMTs in order to develop and change teachers' practice with regards to implementing the revised New Zealand Curriculum (Ministry of Education, 2007).

The overall objective of this research is to investigate professional development approaches used by secondary schools in order to facilitate sustained change in teachers' practice, when implementing the revised New Zealand Curriculum (Ministry of Education, 2007). The study aims to examine the relationship between professional development that has been provided in response to the implementation of the revised New Zealand Curriculum (Ministry of Education, 2007) and changes in teachers' beliefs, knowledge, skills and classroom teaching practices. This study objective and aim is encapsulated in three research questions which have formed the basis for this research study.

Research questions

- 1: How has the introduction of the revised New Zealand Curriculum (Ministry of Education, 2007) challenged teachers in New Zealand secondary schools to change their beliefs, knowledge, skills and teaching practices?
- 2: Which professional development approaches have been used by SMTs, in a sample of New Zealand secondary schools, to support sustained change in teachers' practice when implementing the revised New Zealand Curriculum (Ministry of Education, 2007)?
- 3: How successful have these development approaches been in sustaining changes in teachers' beliefs, knowledge, skills and practice?

Three data collection sites were selected for this study. None of the three schools had a connection to the researcher and were chosen using purposive sampling. The three schools were all secondary schools in New Zealand who have experienced the implementation of the revised New Zealand Curriculum (Ministry of Education, 2007). The schools were of a similar size, educating between 1000 and 1200 students, two schools were co-educational state schools and one was a single sex state integrated Catholic school.

AN OUTLINE OF THE STUDY

Chapter one has presented an overview of this research project, a rationale that justifies the study and an outline of the research aims and questions.

Chapter two presents a literature review that critically evaluates the literature relevant to the study. The three key issues relevant to the study are defined as curriculum implementation, change leadership and teacher development. Within this chapter each issue is defined, its significance is established and links are made between the three key areas.

The research methodology and design are examined in chapter three. I have explained the reasons for taking a subjectivist epistemological position, choosing a qualitative methodology and adopting the three data collection methods of questionnaire, semi-structured interview and focus group. Finally, there is a description of the participants who took part in the study and the methods used for choosing this sample. The chapter concludes with an explanation of the ethical, reliability and validity issues relating to the study.

Chapter four describes and analyses details of the data that was collected. In chapter five this data is then used to draw conclusions that are related to the research questions. I have linked this analysis to the literature regarding curriculum implementation, change and professional development and I have also offered an explanation of the strategies that were deemed to be most successful for developing teachers' practice when implementing the revised New Zealand Curriculum (Ministry of Education, 2007).

Chapter six concludes the study with a summary of the project, a brief review of the possible limitations of the research and final recommendations with regards to practice and further study.

CHAPTER 2: LITERATURE REVIEW

INTRODUCTION

This chapter provides a review of the literature that is associated with my study aims and research questions. Within my study aims there are three core foci, these are: implementation of new curriculum and in particular the New Zealand Curriculum (Ministry of Education, 2007); fundamental change of teachers' practice to accommodate a new curriculum; and professional development that supports teachers to make sustained changes in their practice. Consequently, I have made these themes the focus of my literature review.

CURRICULUM IMPLEMENTATION

Approaches to curriculum reform

There is a wide range of international research exploring the approaches that have been taken by governments in order to effect curriculum reform. The majority of this work explores a tradition of top down initiatives that are imposed on schools by political forces such as governments and their education ministries (Carson, 2008; Guskey, 2009; Macdonald, 2003; Shkedi, 2009; Smith & Southerland, 2007). Macdonald (2003) describes the top down method of reform and implementation to be regarded as "teacher proof" (p. 142). In this approach the teachers play a subsidiary role as the focus is on maintaining a high level of fidelity between the curriculum writers and what is actually delivered in the classroom. Both Carson (2008) and Shkedi (2009) discuss examples of this fully controlled and resourced top down reform process, in which teachers are provided with a curriculum document, scheme outlines, unit plans and text books by the governing power.

However, with the ability to look back at previous curriculum reforms, each one of the studies listed above is critical of the top down approach because it fails to accommodate the teachers and students that are actually implementing the curriculum within the classroom. Smith and Southerland (2007) explain that:

Reform initiatives historically have often failed to account for the impact of unique situations within specific classrooms that are found deep within the multiple complex layers of the overall school. Indeed, despite evidence that effective school change and new program implementation is more dependent on local elements within particular contexts (e.g., the classroom teacher, school administrative support, available resources, etc.) than on federal mandates or other top-down methods of promotion, reform efforts have traditionally neglected or undervalued the effects of such factors). Until recently, the influence of particular institutional contexts and the role of individual classroom teachers (arguably the most critical layer of the school system in terms of efforts to change what happens in schools) have been disregarded. (p. 398)

It is clear that the intentions of the original curriculum writers are often irrelevant because once the curriculum is distributed to teachers and the doors are closed on their classrooms, it then becomes the personal choice of the teacher as to what is taught from the curriculum document and how it is presented. Shkedi (2009) writes:

The formal curriculum is the curriculum as written by the professional curriculum writer; the perceived curriculum is the curriculum as perceived by a teacher; and the curriculum-in-use is what a teacher reports actually happened in the classroom. In general studies have found no congruence between the formal curriculum and the perceived curriculum, or even the perceived curriculum and the curriculum-in-use. (p. 836)

It is due to the perceived failure of the top down approach that other approaches to curriculum implementation have been devised. Macdonald (2003) describes the bottom up approach:

The emergence of new approaches to curriculum reform, such as school-based curriculum development and action research, both particularly influential in Australia, began to consolidate a trend towards locating schools and teachers at the centre of curriculum reform efforts. (p. 142)

However, Macdonald (2003) suggests that this approach led to a low central control process, in which each individual teacher was teaching what they deemed to be

important and there was no equity of educational experience or standard between the lessons that individual students were receiving.

Finally, the most recent solution to curriculum reform and implementation combines both the top down and the bottom up approach (Carson, 2008; Guskey, 2009; Macdonald, 2003; Shkedi, 2009; Smith & Southerland, 2007). Macdonald (2003) characterises this as the partnership approach which involves “collaborative relationships between administrators, curriculum developers, professional associations, researchers, teacher educators, teachers, and parents” (p. 142). In theory, this process offers a very egalitarian approach to curriculum reform and was the strategy used in order to review, revise and implement the New Zealand Curriculum (Ministry of Education, 2007). However, the partnership method still requires an organisation, often a political organisation, to initiate the curriculum reform in the first place and invariably it is the same organisation which collates, edits and publishes the various submissions. Therefore, I would argue that what is being defined as a partnership model is actually just another version of the top down method presented with democratic packaging.

Overall, the methods of curriculum implementation described above are just one aspect of the many complex challenges faced by school leaders as they review, plan and implement a new curriculum document. In the next sub-section, I will explore further challenges and complexities.

The challenges and complexity of curriculum implementation

Reviewing, reforming and implementing a nationwide school curriculum is described by many authors as complex and challenging (Carson, 2008; McLaughlin & Berman, 1975; Pang, 1999). Carson (2008) summarises these challenges when he writes:

The new curriculum represented a fundamental change in philosophy, objectives and structure of the curriculum in the world’s largest education system... changes which set in turbulence teacher’s identities and the system itself. (p. 1)

These challenges are also recognised in the introduction to the New Zealand Curriculum (Ministry of Education, 2007) which outlines the magnitude of the process required to review, design and implement a curriculum. It states:

Following this review a widely representative reference group oversaw a development process that included trials in schools, collaborative working parties, online discussions and an inquiry in relevant national and international research. (p. 3)

Further to this process, the Ministry of Education printed a document designed for feedback called 'New Zealand Curriculum: Draft for Consultation' (Ministry of Education, 2006) from which they received over 10,000 submissions, that were collated and analysed before the final New Zealand Curriculum (Ministry of Education, 2007) document was produced and published.

Side by side, the literature of Carson (2008) and the process that was followed in order to create the revised New Zealand Curriculum document (Ministry of Education, 2007), which I have outlined above, present many of the strengths and weaknesses of a curriculum implementation process. On one hand there is the positive opportunity to step back and reflect as a country on what is it that "we deem important in education" (Ministry of Education, 2007, p. 4). On the other hand, it is a challenge to bring together such a wide range of views, which may lead to conflict that is invariably going to be played out within educational organisations.

Much of the conflict faced by school leaders when implementing a new curriculum is that of dealing with the transition from the old to the new (Carson, 2008; McGee, 2003). Carson (2008) explains that educational leaders need to understand the:

Complex process of learning and unlearning that lurks behind the label 'curriculum implementation'. An erroneous impression is given that the new curriculum is filling up a void, or an empty space that exists in the lived worlds of the teachers and students. In reality the new curriculum enters a space

that is well populated by the understanding and identities formed in relation to the common places of the former curriculum. (p. 5)

Subsequently, if school leaders are going to avoid conflict in the implementation process then they are required not only to plan and implement the physical resources, such as new texts, but at the same time must attempt individual change of each of their teachers' practice. The multi-faceted nature of this task highlights the complex role school leaders must fill when carrying out a curriculum implementation. Particularly, when it is understood that for many school leaders this area of their position will be only one portfolio of many to which they must attend each day. I will explore the role of the school leader in the implementation process in a subsequent section of this literature review.

Finally the school leaders' role is made more challenging and complex when external auditors such as the Education Review Office visit a school to assess if the intentions of the curriculum document have been followed (Education Review Office, 2009). This is defined as an evaluation of the fidelity of curriculum implementation, a term used to refer to how closely those that carry out the teaching of a new curriculum adhere to the original intentions and expectations of the curriculum planners and the published document (McLaughlin & Berman, 1975). I will explore this topic in greater depth in the next sub-section.

Fidelity of Implementation

When exploring the two previous sub-topics of approaches to curriculum reform and the complexity of curriculum implementation, a further sub-topic regarding the fidelity of implementation is described frequently (Carson, 2008; Hertzog, 1997; McLaughlin & Berman, 1975; Smith & Southerland, 2007; Verhoeven, 2002). Both Carson (2008) and Shkedi (2009) believe that if approached poorly this issue can cause conflict and leave the whole curriculum reform process as a wasted opportunity. Shkedi (2009) presents a clear example of how the curriculum reform and implementation process is at the mercy of each individual classroom teacher. She

quotes one of the teachers who she interviewed regarding the implementation of a new curriculum, as saying:

I am not interested in what the curriculum writers expect from me...I never consider what they intended...They provide guidelines for what they believe children should know. I teach what seems relevant to me. (p. 833)

This highlights that even though with the top down and partnership models of curriculum implementation teachers hold little power in terms of leading the process of reform, teachers do have almost total power within the realm of fidelity of implementation and how strictly the intentions of a curriculum document are adhered to and followed (Shkedi, 2009).

However, McLaughlin and Berman (1975) suggest that fidelity of implementation does not have to involve teachers in the classroom ignoring the curriculum planners' intentions, but if treated thoughtfully it can be seen as a process of mutual adaptation that draws on the previous curriculum, the new curriculum and the strengths of everyone involved. This idea of mutual adaptation is also encouraged in the New Zealand Curriculum (Ministry of Education, 2007), which states that the document "is a framework rather than a detailed plan. This means that while every school curriculum must be clearly aligned with the intent of this document, schools have considerable flexibility when determining the detail" (p. 37). For this reason, an implementation process that is most likely to provide fidelity between the principles of the document and what is actually taught in the classroom, must draw on a wide range of individual teachers' experiences, opinions and skills when reviewing, reforming and implementing a new curriculum. However, the difficulty of actually being able to carry out this mutual adaptation process on a national scale links back to the previous subtopic of complexity and the huge challenge faced by those leaders who are responsible for designing and carrying out a curriculum change (Carson, 2008; Guskey, 2009; McLaughlin & Berman, 1975). In the next sub-section regarding the topic of curriculum implementation, I will explore another challenge for leaders implementing a new curriculum which is the task of evaluating their approach.

Evaluation of curriculum implementation

A final sub-topic that is evident in the literature regarding curriculum implementation is the evaluation of a curriculum. This is a topic that is explored on several different levels. These include an evaluation of the document, the process and the people involved and with a view “to improve teaching, to examine effects of new curriculum, to justify school practices, to respond to dissatisfactions and to settle conflicts” (Marsh & Willis, 2003, p. 280).

However, even though there does exist a wide range of possibilities regarding the evaluation of a curriculum there appears to be a limited amount of research relating to this topic. Hopmann (2003) explains:

Those reforming a curriculum also hope, of course, that a change of goals, contents, and of the ways and means will enhance teaching in some way. It is no surprise then that they want to know whether or not the new curriculum has had the impact ascribed to it; in other words, they want an evaluation – or do they? Historically this has not been the case. It has only been recently, within the last two decades or so, that curriculum authorities have started to evaluate systematically what happens after a new curriculum is implemented. (p. 459)

Consequently, Hopmann (2003) is suggesting that even though curriculum planners hope a new curriculum will have a positive change effect, the desire for implementing authorities to carry out evaluations of their goals has previously been small and this may suggest why the quantity of literature regarding evaluation is limited.

Hopmann (2003) does offer three levels which can be used as the focus for some kind of evaluation, these include “the people involved, the processes engaged in, or the product emerging from these processes” (p.460). Evaluative research studies are particularly focused on the first two of Hopmann’s (2003) factors which are the people and the processes involved in implementing a new curriculum. For example, the work of Cowie and Hipkins (2009), Hertzog (1997), Shkedi (2009) and

Tichatonga (1997) all focus on either the process of implementation, or the fidelity of implementation between what was intended by the curriculum designers and what was actually taught by the teachers in the classroom. The methods used in order to evaluate these focus areas are similar and all involve qualitative methods and in particular interviews of teachers or school leaders who have participated in some kind of curriculum implementation. However, the results of these various studies show a wide range of contrasts, which suggests that contextual factors, the curriculum document being implemented and the people involved will have an effect on the level of fidelity achieved.

An example of this kind of evaluative work, within the context of the implementation of the New Zealand Curriculum (Ministry of Education, 2007), is reported by Cowie and Hipkins (2009) who were engaged by the Ministry of Education to explore schools that had been deemed successful in implementing the new curriculum, with the intention of distributing this information to other schools in order to support their implementation journeys. The key findings of this study suggested that it takes several years for teachers to develop their practice in order to incorporate the features of the new curriculum. Furthermore, schools that showed a high level of fidelity with the document were those that maintained a continuous cycle of curriculum evaluation that was being led by a knowledgeable principal who focused on pedagogy and encouraged teacher reflection (Cowie & Hipkins, 2009). A strength of this kind of interview based evaluation is that it provides strong data regarding the teachers' opinions of how they feel about the curriculum document and the process of evaluation. However, I believe a weakness of this kind of evaluation, and a gap in the curriculum evaluation literature as a whole, is that it avoids the question, does the new curriculum as it is being taught in the classroom actually provide students with a better education and preparation for adult life than the previous curriculum? A question that is fundamental, if the effectiveness of a new curriculum is to be based upon an evaluation of students' achievement and learning, rather than issues relating to the fidelity of implementation.

The issues that I have explored in the previous four sub-sections regarding approaches to curriculum implementation, complexity, fidelity and evaluation have all been explored and experienced by the New Zealand education establishment over the past ten years, as they have sought to review, design, implement and evaluate the New Zealand Curriculum (Ministry of Education, 2007). The following three sub-sections will explore the literature relating to this implementation of this document.

Why was the New Zealand Curriculum Framework (Ministry of Education, 1993) in need of revision?

By the beginning of the 21st century the New Zealand Curriculum Framework (Ministry of Education, 1993) was regarded as not meeting the needs of students, due to several key restraints of the document's content and developments that had occurred in society since 1993 (Bolstad, 2005; Bolstad, 2006; Donnelley, 2002; Flockton, 2008). One of the main reasons that the National Curriculum Framework (Ministry of Education, 1993) was perceived in need of revision was the changing role of education, particularly for senior students. Bolstad (2006) explains:

Social changes during the last few decades resulted in a marked increase in the number of students staying in school beyond the minimum school-leaving age. Schools have to cater for a larger and more diverse cohort...In the 'knowledge economy', it is believed to be crucial to have a well-educated (and creative/innovative) population, who can transform knowledge and ideas into marketable commodities. (p. 110)

Consequently, it was felt that some changes had to be made to the New Zealand Curriculum Framework (Ministry of Education, 1993) in order to reflect the changing needs of an increased post-compulsory student population. It was felt that this student body, who had a wider choice of post school pathways available to them and who had to be prepared for a knowledge economy, needed to understand how they learn in order that they could become lifelong learners (Bolstad, 2006; Gilbert, 2005; Le Metais, 2003; Ministry of Education, 2002). This perceived weakness in the New Zealand Curriculum Framework (Ministry of Education, 1993) prompted the government to begin a process that led to the creation of the revised New Zealand

Curriculum (Ministry of Education, 2007). In the next sub-section I will explore the intentions of this new document.

The intentions of the New Zealand Curriculum document (Ministry of Education, 2007)

The New Zealand Curriculum (Ministry of Education, 2007) is a policy statement that provides guidance for teaching and learning in New Zealand's schools. It presents what the education community deem to be important in education. The document has been created in order to support students and teachers to develop values and competencies, whilst also gaining the knowledge they will require for the 21st century (Education Today, 2007; Ministry of Education, 2007, Ministry of Education, 2009b).

The New Zealand Curriculum (Ministry of Education, 2007) presents a vision of "what we want for our young people" (p. 8). The characteristics included in this vision are: confidence; connectedness; active involvement; and lifelong learning. Students are expected to acquire a set of five key competencies which are: thinking; using language, symbols and text; managing self; participating and contributing; and relating to others. Students are also encouraged to value: excellence; innovation, inquiry and curiosity; diversity; equity; community and participation; and ecological sustainability and integrity. There is an expectation that students will learn about values and develop their own ability to express values and empathise with the values of others (Education Today, 2007; Ministry of Education, 2007; Ministry of Education, 2010). There is also a strong emphasis on inquiry based approaches to teaching and learning. With a specific focus on 'teaching as inquiry' that encourages teachers to continually reflect on and change their practice in order to raise student achievement. Students are also encouraged to approach their learning in a similar way by being 'active seekers' who search for, reflect on and create new knowledge (Ministry of Education, 2007).

The New Zealand Curriculum (Ministry of Education, 2007) document also presents curriculum statements related to the eight areas of knowledge: English; the arts; health and physical education; learning languages; mathematics and statistics; science, social sciences; and technology. For each of these learning areas there are achievement objectives which are divided into curriculum levels. Furthermore there is a guide to the curriculum level that students of each school year level should be working towards (Ministry of Education, 2007; Ministry of Education, 2010).

Schools leaders are expected to formalise the New Zealand Curriculum (Ministry of Education, 2007) within their own organisations by developing together with their staff a school curriculum that is consistent with the principles of: high expectations; learning to learn; community engagement; coherence; future focus; inclusion; cultural diversity; and the Treaty of Waitangi (Ministry of Education, 2007; Ministry of Education, 2010). Finally, in the last paragraph of the Secretary of Education's forward to the New Zealand Curriculum, she states "that the challenge now is to build on this framework offering our young people the most effective and engaging teaching possible and supporting them to achieve to the highest of standards" (Ministry of Education, 2007, p. 4).

There is a legal requirement that New Zealand state schools fulfil the intentions of the New Zealand Curriculum (Ministry of Education, 2007), which I have outlined above, and for the Education Review Office to evaluate if schools are fulfilling these intentions (Education Review Office, 2009). In terms of this study, which is evaluating if teachers have had to change their practices due to the introduction of the New Zealand Curriculum (Ministry of Education, 2007) and how these changes have been supported, the intentions of the New Zealand Curriculum (Ministry of Education, 2007) are important because they provide the baseline to which schools are expected to compare their current practice (Education Review Office, 2009; Ministry of Education, 2007; Ministry of Education, 2010). Schools are expected to design an implementation plan that continuously allows them to review, implement and evaluate their practice as they introduce the features of the curriculum document (Cowie & Hipkins, 2009; Education Review Office, 2009; Ministry of Education, 2007;

Ministry of Education, 2010). Key issues that arise from the literature regarding the New Zealand Curriculum (Ministry of Education, 2007) include: how do the intentions compare to the current practices in our schools; what is different; and how are we going to implement the elements that are currently under-represented?

In the next section I will highlight the differences between the New Zealand Curriculum Framework (Ministry of Education, 1993) and the New Zealand Curriculum (Ministry of Education, 2007) and review the literature relating to this topic.

The Differences between the New Zealand Curriculum Framework (Ministry of Education, 1993) and the New Zealand Curriculum (Ministry of Education, 2007)

The New Zealand Curriculum (Ministry of Education, 2007) has the potential to change education in New Zealand and create an educational experience for students that will prepare them for the 21st century (Education Today, 2007; Ministry of Education, 2007; Ministry of Education, 2010). However the implementation of a new curriculum is a huge undertaking that involves schools changing what and how they teach (Cowie & Hipkins, 2009; Ministry of Education, 2009a; Ministry of Education, 2010).

In terms of the implementation of the New Zealand Curriculum (Ministry of Education, 2007) the change experience is going to be different for each educational organisation because each school curriculum is going to be different. This is particularly the case in senior schools, because the introduction of the National Certificate of Educational Achievement (NCEA) in 2002 had allowed secondary schools greater flexibility in the senior assessment pathways that they offered students (Bolstad, 2006). Nevertheless, what is clear from the literature is that every school in New Zealand is going to be involved some kind of change process due to the implementation of the New Zealand Curriculum (Ministry of Education, 2007)

because even though the document was considered a revision of the New Zealand Curriculum Framework (Ministry of Education, 1993) there were some significant new elements introduced. The key differences that the Ministry of Education highlighted between the New Zealand Curriculum Framework (Ministry of Education, 1993) and the New Zealand Curriculum (Ministry of Education, 2007) is that the new curriculum:

- includes a set of common values
- places more emphasis on themes relevant to today's society
- contains five key competencies for students
- raises the profile and status of learning a second language
- raises the profile and status of statistics within mathematics
- makes the Treaty of Waitangi explicit in the overview, purpose, principles and values
- recognises the need for schools to work closely with communities to design relevant learning programmes.

The curriculum also provides greater clarity for teachers, students and trustees by providing clear and simple statements about priorities, expectations and outcomes for each learning area. It also details the type of teaching that brings out the best in students. (Ministry of Education, 2010, p. 1)

Introducing these new elements to schools in New Zealand is invariably going to involve changes to current practices. This change process is considered challenging and it has been highlighted that teachers and school leaders need considerable support in implementing these changes (Cowie & Hipkins, 2009; Education Today, 2007; Ministry of Education, 2009a). School leaders and teachers were requested to attend workshops regarding the implementation of the revised curriculum and at these workshops resources were provided that guided the implementation process (Education Today, 2007; Ministry of Education, 2009a; Ministry of Education, 2010). These resources highlighted the expectation that change would occur throughout the New Zealand Curriculum (Ministry of Education, 2007) implementation process. The

opening page of the Ministry's online implementation resource for schools (Ministry of Education, 2010) is called 'Leading Curriculum Change' and it states:

Whilst responsibility for curriculum change can be shared (in larger schools, it needs to be)... To drive curriculum change, you don't have to be an expert on everything...it would also be a mistake for a reader to think that nothing much is new. While some changes are easy to spot – for example, the introduction of the key competencies, others may be less obvious - for example, the call for some quite fundamental changes in the ways in which people think about teaching and learning. (p. 1)

Therefore, in terms of this study, the key issues emerging from the literature regarding the new elements introduced in the New Zealand Curriculum (Ministry of Education, 2007) are that there is a clear expectation from the Ministry of Education and the Education Review Office that when implementing the New Zealand Curriculum (Ministry of Education, 2007) some change in schools' practice must occur (Education Review Office, 2009; Ministry of Education, 2007). Furthermore, it is expected that school leaders must initiate these changes, that the process is going to be challenging and that both school leaders and teachers need support (Cowie & Hipkins, 2009; Education Today 2007; Ministry of Education, 2009a; Ministry of Education, 2010). These issues link back to earlier sections of this literature review which focused on international curriculum implementation, as it is clear that these same issues experienced by New Zealand teachers implementing the 2007 New Zealand Curriculum (Ministry of Education, 2007) have been experienced by teachers implementing curricular throughout the world (Carson, 2008; Guskey, 2009; Macdonald, 2003; Shkedi, 2009; Smith & Southerland, 2007).

Two key issues which are prevalent throughout the international and the New Zealand implementation literature are relevant to this study. Firstly, the challenge that curriculum implementation presents for teachers who have to potentially change the beliefs, knowledge and practices that they formed around a previous curriculum in order to meet a different model required by a new curriculum document. Secondly, that school leaders have a challenge of even greater complexity because their task is to create systems and professional development that will support a

number of potentially different teachers to make these changes. These challenges for teachers and school leaders, faced by the implementation of a new curriculum, are the core foci of this study. In the next sections I will look in greater depth at the literature regarding fundamental change of this magnitude and the kind of approaches to professional development that can be considered effective in supporting teachers to make sustained changes to their beliefs, knowledge and practice.

CHANGING PRACTICE

Defining organisational change and the reasons for change in schools

Quattrone and Hopper (2001) explain the concept of change to be:

A given entity that passes from one state to another. Ontologically, this concept of change attributes defined features to the entity undergoing change. Thus, the entity (be it an organisation, an individual or state of mind) has well defined characteristics at point 'A' that change when the entity becomes something else at point 'B'. (p. 404)

However this is a simplistic view of change that does not portray the complex processes involved as organisational leaders attempt to change existing structures, cultures, strategies and ways of working in order to hopefully improve an organisation's effectiveness (Chonko, 2004; Hutchinson, 2001; Ming-Chu, 2009).

Change initiatives and implementation processes are initiated in schools in order to better meet the needs of the school community and to raise student achievement (Fullan, 1993; Hopkins, West & Ainscow, 1996; Stoll & Fink, 2001). Consequently, there is a perceived gap between the school's current practices and a hoped for entity, which has been envisaged by whoever has prompted the change process (Lambert, 1998). Within New Zealand, it is likely that the major school-wide change initiatives such as curriculum implementations will be motivated by external agencies such as the Ministry of Education or the Education Review Office. It is then the SMTs responsibility to implement the reform as they aim to develop the school's

effectiveness to serve their students in the best way possible (Hopkins et al., 1996). This places a large amount of responsibility on SMTs, as although the intention of new initiatives maybe reported as aiming to raise student achievement this is not always the case. Implementing change initiatives in schools is a complex process that involves a wide range of often conflicting forces, opinions and factors. A new initiative may not actually lead to an increase in student achievement due to factors such as the content of the original initiative, the context of the implementation or the resources made available (Hall & Hord, 1987).

With regards to this study, the literature that defines organisational change and the reasons for school change has strong links to the previous section of this literature review, which explored curriculum implementation and the New Zealand Curriculum (Ministry of Education, 2007). It is clear that prior to 2007 all New Zealand state schools had existing structures in place that defined their existence and thus created what Quattrone and Hopper (2001) describe as a “point A” (p. 404), which at the time would have been represented by the established practices and school curriculum. Then, once the New Zealand Curriculum (Ministry of Education, 2007) was perceived, created and implemented by the Ministry of Education, all state schools had to begin a change journey. The question of whether new structures that have been created, representing what Quattrone and Hopper (2001) describe as a “point B” (p. 404), are sustainable and an improvement on what went before, will be explored in greater depth in subsequent sections of this literature review and throughout the study as a whole. However, the implementation of the revised New Zealand Curriculum (Ministry of Education, 2007) exposes the weakness of Quattrone and Hopper’s (2001) definition of change, because “point B” in the revised curriculum implementation process should not and cannot be a fixed end point as it is expected that the process of curriculum review, planning and implementation is a cyclical and ongoing process that should not be perceived as an event (Hall & Hord, 1987; Ministry of Education, 2010).

The complexity of change and sustaining change

Changing the practice of an organisation is a challenging and complex process, however if it is done effectively it can lead to benefits and improvements in practice for all those concerned (Bolman & Deal, 2008; Cardno, 2006; Fullan, 2003; Hall & Hord, 1987; Scott, 1999). Scott (1999) explains that “the change process is complex because so many factors may be simultaneously interacting and each change situation is shaped by a unique mix of external, system and local factors” (p. 8). Therefore, a change process is particularly complex for those leading the change because they must consider a wide range of issues that include: communicating the vision of the change process; considering the current culture of the organisation; purchasing the resources required; and managing the people involved in the change (Bolman & Deal, 2008; Hall & Hord, 1987; Scott, 1999).

Complexity is particularly evident in change processes implemented in schools because invariably they involve a number of different staff. In larger schools, change initiatives such as a new curriculum implementation may involve one hundred teachers reflecting on and changing their practice in some way. This suggests a high level of complexity, as the number of different perceptions regarding the change could amount to the total number of people working within the organisation (Chonko, 2004; Kavannagh & Ashkanasy, 2006). Furthermore, each individual will have an opinion of the organisation, an opinion regarding the initiative that is being presented to them and an attitude towards the idea of change itself (Chonko, 2004).

The complex nature of change processes and the many factors that must be considered can be seen as a strength or a weakness for an organisation, depending on how effectively the change is managed (Fullan & Hargreaves, 1992; Hall & Hord, 1987). On one hand, if the many factors involved in a change process are managed effectively then the complex nature of a change could be considered a strength, as the positive effects of the well managed change can be distributed throughout all aspects of an organisation. In this way, each staff member can benefit from developments in their beliefs, knowledge and practice to become change agents

themselves and work as part of the organisation's culture in order to meet a new shared vision (Fullan & Hargreaves, 1991). In contrast, Scott (1999) warns against "silver bullet approaches to change management" (p. 11) that may take the form of a one day workshop, a school leader demanding that staff make immediate changes or a simple change resource posted on-line. These approaches do not allow for the complexity of change and do not consider a diverse range of factors such as resources, communication, pace and current values. In these cases, complex changes poorly managed can be seen as a weakness as they distribute negativity and resistance throughout all aspects of an organisation (Scott, 1999).

Another factor that adds further complexity to change implementation processes is the ability of an organisation to sustain the changes. Hargreaves and Fink (2006) explain that "change in education is easy to propose, hard to implement, and extraordinarily difficult to sustain" (p. 1). In order for an organisation to sustain a change that has been made, the leaders of the change need to plan a cyclical process that considers the depth, length, breadth, justice, resourcefulness and conservation of the initiative (Hall & Hord, 1987; Hargreaves & Fink, 2006). The leaders also need to be aware that organisations operate in a wider political and community environment that may further influence how a change is sustained (Hargreaves & Fink, 2006).

However, if a change process can be managed effectively in this way, by a leader who is able to manage all of the often conflicting factors outlined above, then Schein (2004) suggests that the new way of doing things will become inducted into the organisation's culture. He states that "when a solution to a problem works repeatedly, it comes to be taken for granted. We come to believe nature really works this way" (p. 31). Consequently, if school leaders are able to implement a curriculum in such a way that it becomes accepted into the school culture and taken for granted, then it may be sustained. Fullan (1993) refers to this deep level of change as 'second order' change, a journey that alters the way that organisations are structured and leads to changes in peoples' fundamental assumptions, practices and relationships. However, as I have already explained, this is not an easy task which

has a fixed end point, as once the curriculum is implemented then it will need to be continuously reviewed and evaluated in order to maintain its effectiveness (Guskey, 2000).

Dealing with the complexity of changing individual teacher's practice in response to the demands of the New Zealand Curriculum (Ministry of Education, 2007) and how these changes are to be sustained is central to this study. Although, within the literature there is a strong body of evidence regarding implementation of the New Zealand Curriculum (Ministry of Education, 2007), change and teacher development, a gap exists on where these three topics overlap. Therefore, this study is exploring the link between these three topics and how teachers have been best supported to make sustained changes to their practice, in response to the implementation of the New Zealand Curriculum (Ministry of Education, 2007). It is the responsibility of school leaders to effect, manage and organise support when implementing a change in schools. In the next sub-section I will explore the role of leadership in the change process.

Change leadership

Change that meets the aims of a change process, such as a curriculum implementation, will invariably fail to happen unless a leader plans and manages the change journey (Hall & Hord, 1987; Scott, 1999). In New Zealand schools the leadership team is commonly referred to as the SMT or executive team and together with the Board of Trustees (BOT) it is most likely that they will be expected to drive change initiatives in order to develop a school's ability to provide the best education possible for the students (Hopkins et al., 1996). Increasingly there is an expectation that school leaders are leaders of learning, who are able to lead change in the teaching practices within their schools that will subsequently have a positive effect on students' learning (Robinson, Hohepa & Lloyd, 2009). In the Education Review Office report (2009) into New Zealand's schools readiness to implement the New Zealand Curriculum (Ministry of Education, 2007), it was made very clear that school

leaders play a vital role in change processes, such as introducing the New Zealand Curriculum (Ministry of Education, 2007):

The other critical factor in schools' readiness for, or lack of progress towards, implementation is the impetus school leaders give to the process. In schools progressing well towards implementation, either the principal or another delegated school leader had taken responsibility for managing the change process. They were providing direction and coherence for activities involving trustees, teachers, parents and community members by keeping all parties in the communication loop, facilitating opportunities that gave expression to opinions and ideas, and monitoring agreed actions against the expected timeline. (Education Review Office, 2009, p. 1)

When implementing a new initiative, such as a revised curriculum, it is the organisation's leaders who must build a bridge between the new incoming ideas and the organisation's current culture and practice, thus creating a mutual adaptation process (Carson, 2008). In this situation, the role of the leader can be challenging because the new initiative may be externally mandated and not necessarily the leader's personal vision. Kavanagh and Ashkanasy (2006) explain that in the world of business a "change that results as a result of a merger is imposed on the leaders themselves" (p. 81). Similarly in schools, a new curriculum is thrust upon a school leader. Cardno (2006) believes that it takes "both courage and foresight to set a school agenda for change that is both internally driven and requires change from within when schools are currently under considerable pressure to respond to external change forces" (p. 469).

Returning to Quattrone and Hopper's (2001) point 'A' of change that I considered in the previous sub-section, it is in this preliminary review stage of the change process that a leader must ensure that they gain a good understanding of their organisation's culture and the individual's differing perceptions within that culture, before they begin to attempt a process of mutual adaptation that then begins to change an organisation. The complexity of this task is examined by Fullan (2003). He explains

that understanding an organisation's culture and then attempting to change it, is a challenging task that cannot just draw on one set of leadership qualities. Fullan (2003) states that when faced with organisational culture change, it may seem complicated to suggest, "employing different leadership strategies that simultaneously and sequentially combine different elements" (p. 7). However, this may be the only way of preparing leaders for this complex curriculum implementation role. Yet if this role is carried out effectively, then the complex nature of the process could be considered a strength as the positive effect of a good implementation process will be distributed throughout an organisation (Scott, 1999).

How a leader plans and carries out a change process can have a significant impact on the success or failure of the initiative (Dimmock & Walker, 2002; Schein, 2004; Scott, 1999). Both Cardno (2006) and Scott (1999) observe that once an organisation is faced with a problem or a need for change, it often falls to the responsibility of the leaders to offer a solution. Leaders of change must ensure that the required processes and structures are put in place in order that the essential work of an organisation is achieved. If they carry out their role effectively then they can develop their solutions into shared assumptions that will become a sustained positive organisational culture. In contrast, if when faced by a problem a leader mismanages the process, it can cause staff to feel alienated and become resistant to the change. In this way, the role of the leader can be seen as either a strength or weakness when dealing with a change and when managing an organisation's culture (Bolman & Deal, 2008; Cardno, 2006; Scott, 1999).

Reaction and resistance to change

In order to make changes to something within a school environment invariably one or more members of staff have got to change first (Hall & Hord, 1987). Educational reforms can be challenging for staff members as they require a development of an individual's professional identity, which has been formed through their experiences, values and beliefs (Vahasantanen & Etelapelto, 2009). If the personnel side of change initiatives are not given adequate attention then the process is likely to fail

(Hall & Hord, 1987). Fullan and Hargreaves (1991) state that “If teachers do not like a change, do not understand it, do not agree with it, or think it impractical, then the change will likely be implemented incompetently, insincerely or not at all” (p. 8).

Within an organisation, such as a school, staff members’ individual reaction to the implementation of a change initiative could be different, due to an individual’s subjective perceptions being created by their beliefs and assumptions (Fullan, 2003; McLeod, 2003; Schein, 2004). Whilst one staff member may view established organisational practices as negative and in need of change, another individual at the same organisation may perceive the established routines to be positive and in no need of revision.

In the same way that different individuals within an organisation may perceive the organisation culture differently, so individual’s reaction to change could also be very different. Whilst, one group of individuals might share a common set of beliefs and assumptions that create an accepted norm with regard to a current organisational culture, the same group may not share common assumptions and beliefs regarding change and the process of implementation. Kavanagh and Ashkanasy (2006) explain that a person’s acceptance of a change to an organisation’s culture “hinges on an individual’s perception about the manner in which the process is handled and the direction in which the culture is carried” (p. 81).

Adding further to the complexity of managing groups of staff through a change initiative are the numerous possible reasons for individual resistance change. The key features of staff resistance to change can be identified as: aggressive and open refusal to change; passive-aggressive resistance, in which people seem to agree on the surface but then do nothing; and passive resistance, where individuals fully support the change initiative but again make no change to their actual practice (Janas, 1998). The main factors cited as the reasons for staff resisting change include: gender; age; organisational culture; poor leadership; workload issues; and personal circumstances (Datnow, 2000; Hall & Hord, 1987; Hargreaves, 1990;

O'Neill, 2005). However it should be understood that it is not necessarily teachers who maybe the resisters to change but actually school leaders who stop change happening. All the evaluations carried out thus far regarding the implementation of the revised New Zealand Curriculum have shown that schools that have struggled to implement the revised document are those in which the school leaders have resisted the change or have not taken an active role in leading the implementation (Cowie & Hipkins, 2009; Education Review Office, 2009; Ministry of Education, 2010).

With regard to this study, the literature concerned with the implementation of the New Zealand Curriculum, (Ministry of Education, 2007) focuses on the process of changing school structures and curricula, rather than issues regarding changing individual's professional identities (Ministry of Education, 2010). Yet if the implementation of the New Zealand Curriculum (Ministry of Education, 2007) is to be successful and sustained, then the literature suggests that it is the personnel side of this change initiative that must take priority (Hall & Hord, 1987; Fullan & Hargreaves, 1992; Vahasantanen & Etelapelto, 2009).

In summary, leading a process such as the implementation of the New Zealand Curriculum (Ministry of Education, 2007) involves change within organisations. In order to implement change successfully leaders need to focus on the personnel involved in a change process, providing support for individuals who often find change hard and can be resistant to the initiative (Hall & Hord, 1987; Fullan & Hargreaves, 1991; Vahasantanen & Etelapelto, 2009). The wide variety of staff that may be involved in a change process can influence the success or failure of an initiative and this presents a complex journey that change leaders must skilfully manage (Bolman & Deal, 2008; Cardno, 2006; Fullan, 2003; Hall & Hord, 1987; Scott, 1999). If done successfully, change can be experienced in individuals' beliefs, knowledge and practice, with the benefits being distributed throughout an organisation and as a result lead to a sustained change in culture. However, if led poorly then change initiatives may not be implemented effectively, nor sustained, and this can create a negative organisational culture (Dimmock & Walker, 2002; Schein, 2004; Scott, 1999).

In the next section of the literature review, I will explore the approaches to professional development that support teachers to make sustained changes to their beliefs, knowledge and practices.

PROFESSIONAL DEVELOPMENT

Defining professional development

The literature that explores professional development of teachers does not provide a consensus on a definition of professional development in education (Buysee, Pamela & Rous 2009). Instead there is a broad range of approaches, activities and resources that are labelled professional development, even though they serve very different aims and make use of very different strategies. In its wider sense, professional development begins in pre-service training and continues throughout a teacher's career and includes any activity that partly or primarily prepares staff for improved performance (Buysee et al., 2009; Darling-Hammond, Mclaughlin & Kappan, 1995; Desimone, 2009). The kind of activities that may be experienced in order to change and improve a teacher's practice include: development of curriculum materials; workshops; conferences; college courses; coaching; classroom observations; paired reflection; action research; and involvement in professional associations (Desimone 2009). This list is not exhaustive, but serves as an example of the wide range of possible approaches and activities that could be considered professional development. Buysee et al. (2009) suggest that the diversity of this list and the lack of a shared definition or understanding of what is professional development is a weakness in the field of education. They state that:

Even more unsettling is the realization that there is no agreed-upon definition of the term *professional development* in education or related fields...which likely contributes to the lack of a common vision for the most effective ways of organizing and implementing professional development. (p. 235)

However, although there is no shared definition of professional development, there is consensus in the literature regarding the need for professional development that will

improve teachers' practice in a way that will lead to improved learning and achievement for their students (Buysee et al., 2009; Darling-Hammond et al., 1995; Desimone, 2009; Garet, Porter, Desimone, Birman & Yoon, 2001; Piggot-Irvine, 2006; Timperley, Wilson, Barrar & Fung, 2007). There is also general agreement concerning the purpose of professional development, the opportunities it should provide for teachers and the kinds of activities that lead to the greatest sustained shift in teachers' practice and students' achievement. In the next section I will explore the literature regarding these sub-topics.

The purpose, provision and approaches of professional development for teachers

Although different researchers of professional development may use different terminology regarding the opportunities that professional development should offer teachers, there is considerable consensus on the characteristics of professional development that allow teachers to improve their practise and raise student achievement (Desimone, 2009; Garet et al., 2001).

Professional development needs to be a critical concern of school leaders and should be based on a holistic model that meshes leadership, performance management and strategic management (Cardno, 2005). Professional development should be connected to the work that teachers are doing with their students, provide opportunities for teachers to examine students' work collaboratively and should be linked to other areas of school culture (Darling-Hammond et al., 1995; Desimone, 2009; Ingvarson, Meiers & Beavis, 2005). Professional development may also allow teachers to reflect on their practice, engage them in identifying what they need to learn and allow them to be involved in the planning of how these needs will be met. Finally, professional development should provide opportunities for teachers to test new methods of practice, whilst receiving coaching and support from their colleagues (Darling-Hammond et al., 1995; Desimone, 2009; Ingvarson et al., 2005).

In terms of approaches to professional development that lead to sustained changes in teachers' beliefs and skills, the Department of Education and Development Victoria (DEECD) (2005) present a range of models that can be used to "help teachers analyse and reflect on the impact of their practice and generate ideas for improvement" (DEECD, 2005, p. 1). The models that they offer are: action research; team examination of student work; study groups; case discussions; peer observation; and small group lesson study. Although, the format of these models are significantly varied, all of them allow the teacher to be part of a small group or pair, and all of them allow the teacher to take part in reflective development, rather than having facilitator led development that is 'done to them' (DEECD, 2005). Similarly, Lord and Miller (2000) believe that recent curriculum reforms ask for teachers to significantly develop how and what they do in their classrooms: a deep level of change that "requires more powerful approaches to professional development" (p. 1). They suggest that in order to effect complex and ambitious change of this nature, leaders must adapt a professional development approach that employs teacher leaders or coaches from within a school's own teaching staff. Lord and Miller (2000) state that one response to large-scale curriculum implementation in the USA:

Has been to identify and deploy a corps of teacher leaders to provide support to their colleagues in changing instructional practice... There are simply too few administrative staff, with the needed expertise or experience to provide the professional development that might lead to lasting change among classroom teachers. The most likely source for satisfying this leadership is the district's corps of experienced teachers. (p. 3)

However, Timperley et al. (2007) believe that there is not one particular method of professional development which works more effectively than another. They suggest that the most important characteristic of professional development that leads to fundamental change in teachers' practice is that teachers are able to engage in "multiple and aligned opportunities that support them to learn and apply new understandings and skills" (p. xxx). Timperley et al. (2007) also support the 'teaching as inquiry' approach presented in the revised New Zealand Curriculum (Ministry of Education, 2007), which makes a link between how teachers reflect on

and develop their own practice and the learning outcomes of their students. Furthermore, Timperley et al. (2007) did find that most methods of professional development that could be found to impact on student learning, involved some element of workshops plus teacher coaching, an approach that is similar to the teacher leaders model suggested by Lord and Miller (2000).

In order to promote sustained and fundamental change in teachers' practice it is not enough for school leaders to only implement the effective characteristics of professional development outlined above: they must also consider the context of the school culture into which the implementation will occur (Guskey, 2003; Penuel, Fishman, Yamaguchi, Lawrence & Gallagher, 2007; Timperley et al., 2007). Consequently, leaders of professional development need to consider the school culture at the time of their implementation, challenge any negative discourses that may exist and at the same time promote a professional learning community. They must also take into account the demands that the professional development activities will place on teachers and how well these activities will align with teachers' own perceptions of their personal development needs (Penuel et al., 2007; Timperley et al., 2007). For professional development to be effective, in that the aims of the activity are met and student learning is ultimately improved, then school leaders must be aware that all professional development occurs in situations which will have many contextual factors that may influence a professional development activity. Guskey (2003) writes:

It seems clear, therefore, that differences in communities of school administrators, teachers and students uniquely affect professional development processes and can strongly influence that characteristics that contribute to professional development's effectiveness. Because of these powerful contextual influences, broad-brush policies and guide-lines for best practice may never be completely accurate. (p. 16)

In terms of this study, the contextual influences on professional development activities are another link to previous sections of this literature review which explored

the challenges of implementing a new curriculum and peoples' reaction to change. What Guskey (2003) highlights above with regards to professional development, is the same issue that Carson (2008) observes in curriculum implementation and Scott (1999) with change leadership. They all present the complexity of implementing something new, be it a curriculum or a professional development activity, into a culture which is already established and is a community of people with individual perceptions, beliefs and reactions to change. In this way, similar to the implementation of a new curriculum, professional development that necessitates change to teachers' working practices can profoundly challenge their beliefs. Therefore, opportunities for professional development need to be thought out carefully and accommodate a wide range of individual teachers' needs, styles and attitudes to change.

Evaluation of professional development

Historically, evaluations of professional development activities and programmes have focused on teachers' satisfaction regarding the activity or resource that they experienced and improvements in professional development courses were created by increasing the amount of the time provided to implement the activity (Desimone, 2009; Guskey, 2000; Guskey, 2003). However, more recent literature concerning the evaluation of professional development activities suggests that evaluations need to in some way analyse the link between the professional development activity, the change this had made upon teachers' practice and the impact on students' learning (Desimone, 2009; Guskey, 2000; Penuel et al., 2007). In the case of professional development that is provided in order to support the implementation of a curriculum, such evaluation should also consider the quality of the implementation process, with regard to the fidelity between the curriculum designers and what is being delivered in the classroom (Penuel et al., 2007).

In the case of the implementation of the New Zealand Curriculum (Ministry of Education, 2007) this kind of fidelity focus of evaluation is the only type of evaluation that appears to have been carried out thus far (Cowie & Hipkins, 2009; Ministry of

Education, 2009b). This raises the concern that there has yet to be a study which evaluates if the implementation of the New Zealand Curriculum (Ministry of Education, 2007) has led to changes in teachers' practice, that in turn have improved students' education.

In terms of how evaluation of professional development activities should take place, Guskey (2000) suggests that the process should focus on the five key areas of: participants' reactions; participants' learning; change caused within the organisation; how the participants have applied what they have learnt; and what was the impact on their students.

Good evaluations are the product of thoughtful planning, the ability to ask good questions, and a basic understanding about how to find valid answers. In many ways they are simply the refinement of everyday thinking. Good evaluations provide information that is sound, meaningful, and sufficiently reliable to use in making thoughtful and responsible decisions about professional development processes and effects. (Guskey, 2000, p. 1)

This wide range and depth of analysis presents the challenge of how the evidence used for evaluative purposes can be gathered, particularly due to the fact that professional development can be offered using a wide variety of characteristics, approaches and activities. However, Guskey (2003) offers an equally wide range of possible evidence that may be collected in order to measure if a professional development activity has improved students' learning and achievement. He states:

Evidence might include a variety of indicators of student achievement, such as assessment or test results, portfolio evaluations, marks or grades, or scores from standardized examinations. It might also include affective and behavioural indicators, such as students' attitudes, study habits, homework completion rates or classroom behaviours. School wide indicators such as attendance rates, drop out statistics, reductions in discipline problems, enrolments in advanced classes, memberships in honour societies, and participation in school-related activities might be considered as well. (Guskey, 2003, p. 15)

Furthermore, this list only refers to evidence that may provide evaluative judgements regarding analysis of student learning outcomes. If evaluation of professional development activities should also consider other kinds of evaluation such as participants' reaction and participants' learning, then other types of evidence may be considered. These could include: questionnaires; reflections; school records; interviews; participant portfolios; observations; and video or audio recordings (Guskey, 2003).

Overall, evaluation of professional development is vital if both teachers and school leaders are going to be able to judge if the time and resources they have invested into changing teachers' beliefs, knowledge and classroom practices has been worthwhile and has led to raised student achievement. This is particularly relevant to the professional development supplied when implementing a new nationwide curriculum, such as the New Zealand Curriculum (Ministry of Education, 2007), which will significantly affect a whole nation of teachers and students in state schools.

LITERATURE REVIEW CONCLUSION

In this chapter I have reviewed the three topics of curriculum implementation, changing practice and professional development, which are all central to the aims and research questions that this study explores. In relation to this study, the key aspects that emerge from the literature review are that implementation of the revised New Zealand Curriculum (Ministry of Education, 2007) requires teachers in New Zealand schools to do something different and therefore develop their beliefs, knowledge and classroom teaching practices (Cowie & Hipkins, 2009; Education Review Office, 2009; Ministry of Education, 2010). Supporting teachers to change their practice is a complex journey that involves understanding many different individuals' perceptions whether they are school leaders or teachers. However, if this process is managed effectively, a newly implemented curriculum can offer benefits for teachers and offer students an improved education that will prepare them for the future (Ministry of Education, 2007).

Three themes that emerge from the literature review as being prevalent throughout all of the core topics include: complexity; individuals' perceptions; and the need for regular formative evaluation of new processes that are implemented in schools. The role of the school leader is the overall link between the three topics explored in the literature review and these three themes, as it is they who must face the challenge of implementing a new curriculum, design appropriate professional development to support the implementation and manage the complexity of teachers' reaction to the learning and unlearning process (Carson, 2008).

In the next chapter I will discuss the rationale and justification for choosing a qualitative methodology for data collection and analysis for this study and three methods of investigation techniques will be introduced.

CHAPTER THREE: METHODOLOGY

INTRODUCTION

This chapter presents a justification and rationale for adopting a subjectivist epistemological position for this study and consequently a qualitative approach to methodology, data collection and analysis. An explanation of sampling methods used is also provided, together with descriptions of the three data collection methods – questionnaires, semi-structured interviews and focus groups. Finally I explain the procedure of general inductive analysis that was used to manage the data and issues regarding ethics and validity related to the study.

RESEARCH METHODOLOGY

For this study I took a subjectivist epistemological position. I chose this epistemological position because my research questions were centred on teachers' change practices and how successful these practices are perceived to be. The subjectivist conception of social reality has a philosophical basis that the world exists but people perceive it in different ways and therefore organisations such as schools are an invented social reality. A subjectivist conception of reality aims to discover how individuals interpret the world in which they live and what meaning they place upon their actions (Cohen, Manion & Morrison, 2007). For this reason, I chose the epistemological position because the nature of the social phenomenon being investigated in my study is created by teachers and the human mind. Furthermore, my research questions led me to complete the study within educational organisations and the basis of knowledge corresponding to the social reality of schools is one that is created by the perceptions of the staff and students (Dash, 2005).

The subjectivist epistemological position I took led me to adopt an anti-positivist paradigm. A paradigm provides a conceptual framework with which to make sense of the world. The importance of paradigms is that they shape how we perceive the world and this perception is supported by a community of practitioners (Burrell & Morgan 1979; Khun, 1970).

Anti-positivism emphasises that social realities, such as educational organisations, are perceived and interpreted by the individual according to their own ideological position, “therefore, knowledge is personally experienced rather than acquired from or imposed from outside” (Dash, 2005, p. 1). Anti-positivism also suggests that social realities are multi-layered and complex, leading to single phenomenon having multiple interpretations (Cohen et al., 2007). As a result, the anti-positivist approach made sense in the case of my study because I sought individuals’ opinions regarding the phenomenon of curriculum implementation and change, which suggested that because there were a number of teaching staff involved there was a complex range of experiences, perceptions and interpretations.

Consequently, I rejected the positivist paradigm because the positivist perspective suggests there is only one reality which is self apparent and can be studied objectively (O’Byrne, 2007), and therefore the complex and subjective nature of my study did not lend itself to this positivist belief. Cohen et al., (2007) state:

Where positivism is less successful however, is in its application to the study of human behavior where the immense complexity of human nature and the elusive and intangible quality of social phenomena contrasts strikingly with the order and regularity of the natural world. The point is nowhere more apparent than in the context of the classroom and school where the problems of teaching, learning and human interaction present the positivistic researcher with a mammoth challenge. (p. 2)

This suggests that social worlds such as schools are ever changing and continuously evolving and therefore should be studied in their natural state. People are not lab-test dummies and actively construct their social world (Cohen et al., 2007). Therefore, because this study was focused on exploring the social reality of teachers who were questioned within the context of a curriculum implementation in educational organisations, then it did not benefit from a positivist approach.

By adopting an anti-positivist viewpoint for this study I was aware that criticisms of this approach existed. Tolich and Davidson (2003) suggest that the qualitative

methods of data collection used in relation to an anti-positivist approach are time consuming and unstructured. The anti-positivist approach is also criticised for lacking methodological transparency and being too subjective, due to the fact that qualitative findings and data analysis can rely heavily on the researcher's unsystematic choosing of which data is important and which data is discarded. This also means that qualitative findings are difficult to replicate and lack the ability to be generalised to a wider sample of the population (Bryman, 2008; Denzin & Lincoln, 2000).

However, the time consuming, flexible and subjective nature of an anti-positivist approach, which allows the researcher to study an ever changing subject in its context, is the very reason that Denzin and Lincoln (2000) give for using qualitative data collection methods when studying human beings and society. Anti-positivists reject "the view point of the detached, objective observer – a mandatory feature of traditional research" (Cohen et al., 2007, p. 19) and instead believe that the social world can only be understood through the eyes of the individuals who are taking part in the ongoing activity that is being investigated. Bryman (2008) states:

Social reality has a meaning for human beings and therefore human action is meaningful – that is, it has a meaning for them and they act on the basis of the meanings that they attribute to their acts and to the acts of others...it is the job of the social scientist to gain access to peoples' 'common-sense thinking' and hence to interpret their actions and their social world from their point of view. (p. 16)

Further defense is provided of qualitative research approaches by Mason (1996), Raibee (2004) and Thomas (2006) who all suggest that it is possible for qualitative researchers to establish a transparent and structured approach to their studies if they document a clear rationale for the basis of their decision making and use a general inductive approach to data analysis. Furthermore, although Bryman (2008) believes that qualitative studies lack the ability to be generalised, as they by definition are preoccupied with a particular contextual aspect of a community, he does suggest transferability as an alternative. Thus, if the qualitative researcher provides a detailed, structured and transparent rationale for the assumptions they

have made when carrying out a study, it can provide readers with enough information to transfer findings to other contexts (Bryman, 2008; Trochin, 2006).

Overall, because this study explored the complex social reality of teachers as expressed through their opinions regarding curriculum implementation and their changing practice, it was best suited to a subjective anti-positivist methodology.

Dash (2005) suggests that if a study adopts an anti-positivist paradigm then it will lead to a qualitative study approach that uses methods such as focus groups and interviews. Accordingly, I used a qualitative approach, because I believed that these methods provided the most effective understanding of my research questions and aims. The three relevant research methods adopted for my study were questionnaires, semi-structured interviews and focus groups. In the next section I will explain my reasons for choosing these methods, key issues relating to this choice of methods, choice of samples and the principles and practice of data analysis.

RESEARCH METHODS

The overall objective of this research was to investigate professional development approaches used by secondary schools in order to facilitate sustained change in teachers' practice when implementing the New Zealand Curriculum (Ministry of Education, 2007). The nature of this problem suggested that I needed to focus the data collection on secondary schools in New Zealand who had experienced the implementation of the New Zealand Curriculum (Ministry of Education, 2007).

The study objective also suggested that the research methods chosen to meet this goal needed to engage with teachers and school leaders, in order to explore their opinions and experiences regarding the implementation of the New Zealand Curriculum (Ministry of Education, 2007). This led me to make the choice of three

different types of qualitative data collection methods which were questionnaires, focus groups and semi-structured interviews. I also considered using a multiple site case study. However this was rejected as the study objective required a focus on the professional development used to support the implementation of the revised curriculum and I felt that a case study approach would be contextually too specific and lead to comparisons between sites, rather than synthesis of the data which would better meet the study objective.

By choosing three different forms of data collection method it allowed me access to the opinions and experiences of a broad range of staff including teachers, subject leaders and senior managers. Consequently, because I used three qualitative data collection methods, I then adopted a general inductive process of data analysis in order to draw key themes from all of the data and to cross reference the responses of these three different groups of people who were from three different organisations. In the next sub-section, I will provide a rationale for these choices regarding approaches to sampling, data collection and data analysis.

School Sampling

It is important to design a well defined sampling approach in order to lead to unbiased results that could be of use to a broad spectrum of the population (Trochin, 2006; Wilmot, 2005). I employed purposive sampling for this study in order to select the participating schools. Wilmot (2005) describes purposive sampling as a:

Technique often employed in qualitative investigation. With a purposive non-random sample the number of people interviewed is less important than the criteria used to select them. The characteristics of individuals are used as the basis of selection, most often chosen to reflect the diversity and breadth of the sample population. (p. 1)

I used purposive sampling because the research objective necessitated that I draw participants from a particular group of the education population. The criterion that

the research objective dictated was that of secondary schools that had taken part in the implementation of the New Zealand Curriculum (Ministry of Education, 2007).

Theoretically, the most reliable data for this study would have been gained if I was able to collect data from every state secondary school in New Zealand. However, the researcher's available time, resources and access to participants restricted this possibility. Nevertheless, there was a need to collect data from more than one school to ensure sufficient depth to the results and allow for the ability to cross-reference data in order to strengthen the reliability and validity of the research. Therefore, to gain a balance between the available time and sufficient depth of data, I invited three schools to take part in the study.

As I have explained, a purposive sampling criterion was used in order to select schools that I invited to take part in the study, by applying this criterion I was faced with a possible sample of over 800 schools in New Zealand. All of these schools uniformly met the purposive sampling criterion, however I did not want to send an invitation to all 800 schools, because I did not want to waste the time of so many school principals when I only required three schools to take part. Therefore, I used a convenience sampling approach to decide which schools I would choose to invite first. Bryman (2008) explains that "a convenience sample is one that is simply available to the researcher by virtue of its accessibility" (p. 183). In this way, I selected state secondary schools in the South and Central Auckland areas as these were closest to the researcher's place of work. Initially I contacted 18 schools by email and those which responded I followed up with a further email or a phone call. At the end of this process there were only three schools with the available time to take part in the data collection and so this defined the three schools that would become the sample for the study. Within each school I then conducted a questionnaire with teaching staff, interviewed the curriculum leader and administered a focus group with subject leaders.

Questionnaire

The first of the research questions in this study states: 'How has the introduction of the New Zealand Curriculum challenged teachers in New Zealand secondary schools to change their beliefs, knowledge, skills and teaching practices?' This question required the need to gather the opinions of teachers in the three participating schools. Purposive sampling was used once again, with the selection criterion being all those teachers in each participating school who had experienced the implementation of the New Zealand Curriculum (Ministry of Education, 2007). As this criterion created a large sample of approximately 180 teachers (60 in each school) the questionnaire provided the most suitable data collection method. The advantages of the self-completion questionnaire for larger samples are that: they avoid interviewer bias; require little cost; do not take up much time for the researcher or the participant; and are convenient (Gillham, 2000).

The aim of the questionnaire was to discover if teachers had needed to change their beliefs and teaching practices in order to implement the New Zealand Curriculum (Ministry of Education, 2007). To meet this aim I followed a six step process that involved: deciding on the questions; drafting the items; sequencing the items; designing the format; testing the questionnaire; and developing an approach to data collection, coding and analysis (Anderson, 1998). The format of the questionnaire was laid out with clear instructions and questions that were structured with a balanced number of open and closed questions. These factors are important if self-completion questionnaires are to be filled out correctly and are to gain a high response rate (Jenkins & Dillman, 1997). I also aligned the questions in the questionnaire to those being used in the focus group and interview schedules, so that comparisons could be made between the three types of data, thus strengthening the validity of the results.

The limitations of self-completion questionnaires include: lack of clarification available from the interviewer; inability of the interviewer to probe participants in order to elaborate on an answer; limits to the amount of questions able to be asked;

and low response rates (Bryman, 2008; Gillham, 2000). To counter these limitations, I piloted the questionnaire using six teachers, two from each participating school, which confirmed that the format of the questionnaire was acceptable and the questions could be read and understood by the participants. I also arranged to administer the questionnaire by attending a full staff briefing of all the teachers in each participating school at which the questionnaires were distributed, completed and returned. This allowed me to explain the questionnaire and then to collect them in, which led to greater clarity for participants and a higher response rate. Furthermore, in order to meet the objectives of research question one there was not a need to probe participants to gain further information as the more detailed information would be gathered in the focus groups and interviews.

The questionnaire was administered to secondary teachers in each of the three schools that I visited in the same way. Completion of the questionnaire was voluntary and I requested that only teachers complete it who had experienced the implementation of the revised New Zealand Curriculum (Ministry of Education, 2007). A total of 140 questionnaires were returned by the participants, from a total of 180 teaching staff working in the three schools. The questionnaire was divided into six questions (see Appendix One). Questions one to four asked direct questions relating to the implementation of the revised New Zealand Curriculum (Ministry of Education, 2007) and professional development. Each of these questions provided boxes that participants ticked if they believed the corresponding statement related to them and it was requested that they tick more than one box if necessary. Also there was space for participants to add any further comment relating to the question. Questions five and six were more open questions that asked participants to comment on anything else that they would like to add regarding implementation of the revised New Zealand Curriculum (Ministry of Education, 2007), sustained change in teachers' practice or professional development.

The data from the questionnaire, as with all three methods of data collection was managed using the same general inductive analysis method, I will justify and explain this approach to data analysis in a subsequent section.

Semi-structured interviews

Semi-structured interviews were conducted to explore the second of the research questions in this study: 'Which professional development approaches have been used by SMTs, in a sample of New Zealand secondary schools, to support sustained change in teachers' practice when implementing the New Zealand Curriculum?' This question necessitated in-depth questioning of those people in each organisation who had responsibility for leading professional development that supported the implementation of the New Zealand Curriculum (Ministry of Education, 2007). Subsequently, this became the purposive sampling criterion I used to select the participants of the semi-structured interviews that I carried out in each organisation. In two schools there was one member of the SMT who had overall responsibility for planning and organising professional development, which led me to carry out one interview in each of these participating organisations. In the third school these responsibilities were shared between two members of SMT, therefore in this school I conducted the interview with both of these leaders present and sharing their opinions.

The format of the semi-structured interview is one in which the researcher has a list of specific topics to be covered, however the interviewee has a great deal of leeway on how to reply (Hoepfl, 1997). In this way, the semi-structured interview allowed me to focus on the topic of professional development in relation to the implementation of the New Zealand Curriculum (Ministry of Education, 2007), yet at the same time allowed some flexibility to discover different strategies that schools may have used. Bryman (2008) explains, "questions may not follow on exactly in the way outlined on the schedule. Questions that are not included in the guide may be asked as the interviewer picks up on things said by the interviewees" (p. 438).

Three semi-structured interviews took place over a period of three weeks and were held in the office of each participant at a time that was suitably convenient for them. All the interviews were recorded and transcribed and in order to maintain confidentiality pseudonyms were used throughout the transcription, data analysis

and reporting process. Participants of the semi-structured interviews were asked seven questions (see Appendix Two) that were focused on a range of topics regarding the implementation of the New Zealand Curriculum (Ministry of Education, 2007) in their organisation. The focus of the questions were associated with changes individual teachers experienced as a result of the revised curriculum implementation and the approaches to professional development that were used to support these changes. A balance of fact, opinion and behaviour questions were used in order to focus the participants' answers on the topic of professional development used to support change in relation to the revised curriculum implementation, whilst at the same time allowing some openness so that they could describe their personal experiences (Gillham, 2000). In practice, the response of the participants confirmed that the choice of the semi-structured interview was the most suitable for the purpose, because it focused the answers on the core research topics but also allowed the participants enough flexibility to describe their approach to professional development support which was unique in each school. The interview questions were also aligned with those used in the teacher questionnaire and the subject leaders' focus groups. This allowed me to look for convergence between the three sets of data from the three different participating organisations, as a way of triangulating the results and consequently strengthening the reliability and validity of the findings (Creswell & Miller, 2000).

Focus groups

Focus groups were carried out to explore primarily the third research question: 'How successful have these development approaches been in sustaining changes in teachers' beliefs, knowledge, skills and practice'. To explore this issue I needed to draw a sample from staff who would have knowledge and experience of teachers' practice. This led me to purposively sample the subject leaders in each participating school because they all work closely with groups of teachers, make regular observations of teachers teaching and have in-depth knowledge of teachers' practice. Furthermore, the questionnaire gathered the opinions of teachers and the interviews collected the views of senior managers and so by using subject leaders as

the sample for the focus group, it further widened the depth of the overall sample and led to greater opportunities for strengthening reliability and validity.

The purposive sample criterion of subject leaders, created a sample of eight to ten participants in each of the schools. In order to explore the answer to research question three I needed an in-depth and flexible method of questioning these staff members. This discounted the questionnaire, but presented the possibility of either individually interviewing each subject leader or carrying out focus groups. Morgan (1997) explains that the focus group method is “a research technique that collects data through group interaction on a topic determined by the researcher” (p. 6). In view of the large number of subject leaders, my limited time and the need to discuss a predetermined topic, then the focus group was the preferred option.

Similar to the semi-structured interview, the focus group method also allowed me to centre the discussion on the topic of development approaches that led to sustained teacher change, whilst providing participants with enough space to describe their experiences. The focus group method provided a further benefit in that it allowed the subject leaders to respond to each others’ comments. Bryman (2008) highlights that the benefit of the focus group over the interview is that it allows the facilitator to understand the “ways in which individuals discuss a certain issue as members of a group, rather than simply as individuals” (p. 473). This interaction was important to my study as it allowed me to understand which teacher development strategies have been effective within certain faculties and which have been deployed effectively across a whole school, or even across all three schools.

One focus group was carried out in each participating organisation over a period of three weeks following the same focus group schedule (see Appendix Three). All subject leaders in each school were invited to take part and all gave their consent. However on the day, due to absence, several subject leaders in each school could not take part, which still left me with between four and seven participants in each

group, which is the minimum number Greenbaum (1998) suggests is needed for meaningful mini-focus group discussion and data.

A brief introduction section and general open question regarding the revised curriculum eased participants into the discussion. Then there were seven 'what' and 'how' open questions that explored professional development approaches that have led to sustained change in teachers' practice, in response to the implementation of the New Zealand Curriculum (Ministry of Education, 2007). Once again these questions were aligned to those used in the questionnaire and the semi-structured interviews to provide opportunities for triangulation.

DATA ANALYSIS

Qualitative research tends to produce large amounts of data which requires structured data analysis in order to extract meaning from the vast quantity of information. Raibee (2004) explains that "the process of qualitative analysis aims to bring meaning to a situation rather than the search for truth focused on by quantitative research" (p. 657). However, throughout the various stages of this process it is important that the objective of the study drives the analysis so that sense can be made of the extensive amounts of information and irrelevant data can be discarded (Krueger & Casey, 2000).

There is not an exact process to be followed when analysing qualitative data, although it is important that reporting does use analytical procedures in a detailed and systematic way (Bryman, 2008; Mathie & Carnozzi, 2005). In practice most studies will draw on a number of data analysis approaches in order to create meaning from the data that has been collected (Green & Thorogood, 2004). In terms of this study, I adopted a general inductive approach as an overall framework to analyse the data from all three participating schools and all three methods of data collection (Thomas, 2006). A general inductive approach is the most suitable for this study because it provides a transparent and structured method for dealing with large

amounts of qualitative data collected using a number of different sources (Raibee, 2004; Thomas, 2006). The overall objective of the inductive approach to data analysis is to allow findings to be uncovered from the significant themes that are prevalent in the raw data. Thomas (2006) describes the key purposes of general inductive analysis to be:

1. to condense extensive and varied raw text data into a brief, summary format;
2. to establish clear links between the research objectives and the summary findings derived from the raw data and to ensure that these links are transparent (able to be demonstrated to others) and defensible (justifiable given the objectives of the research); and
3. to develop a model or theory about the underlying structure of experiences or processes that are evident in the text data. (p. 238)

However, within the practical application of this approach I also made use of both Krueger (1994) and Raibee's (2004) framework analysis. There are five key stages to framework analysis which are: familiarisation with the raw data; identifying a thematic framework; indexing; charting; and interpretation (Raibee, 2004).

Coding forms the core of this data analysis process, "qualitative field analysis essentially begins with the activities of 'coding and memoing'. They constitute much of what it means to 'work at analysis'" (Lofland, Snow, Anderson & Lofland, 2006, p. 200). The actual process of coding involves sorting the data into a number of groupings that allow the information to be categorised systematically and thus make it meaningful from the perspective of one or more frameworks (Mathie & Carnozzi, 2005; Lofland et al., 2006). The labels used for the organising of ideas that are given to segments of data or answers given by participants, constitute codes. Consequently, the codes are the name given to represent a group of similar ideas or opinions that can be observed in the data (Bryman, 2008; Lofland et al., 2006). Mathie and Carnozzi (2005) suggest "that coming up with these topics is like constructing an index for a book or labels for a filing system... you look at what is there and give it a name or label" (p. 5).

In terms of physically carrying out the coding process, it occurs using two overlapping sorting systems. Lofland et al. (2006) state that “coding essentially occurs via two overlapping sorting and categorizing processes called initial coding and focused coding” (p. 201). Initial coding begins by condensing the data into topic groups that make sense in terms of your relevant perspectives. Thus, going line by line through the data and asking questions such as what is this? What does it represent? What is this an example of? (Lofland et al., 2006). Once this initial coding is under way, then focused coding takes place. Focused coding:

builds on initial coding in three ways: by usually beginning after the former is well under way, by using a selected number of the expanding or more analytically interesting initial codes to knit together larger chunks of data; and by using these expanding materials as the basis for asking more focused and analytical questions. (Lofland et al., 2006, p. 201)

Overall, the purpose of this process is to allow thorough and systematic analysis of the data, not only making sense of individual quotes, but also allowing the researcher to see the relationship between quotes and links between all the different data (Krueger, 1994).

Analysis of the questionnaire, focus group and interview data

In order to carry out the practical analysis of the data that I collected from the three participating organisations and the three collection methods I used the same process. This process involved using a general inductive approach that included a number of different steps (Krueger, 1994; Raibee, 2004; Thomas 2006). The five steps that I followed were those based on Kreuger’s (1994) framework analysis because these provided a transparent and structured method for dealing with data from multiple sources and gathered using multiple methods. The five steps are: familiarisation with data; identifying a thematic framework; indexing; charting; and interpretation (Krueger, 1994). In the first instance I analysed each set of data separately following the five steps. I then further analysed the data for thematic links between data collected from each organisation and then again for thematic links

between data collected from different organisations. I dealt with the data using each of the five steps of data analysis (Krueger, 1994; Raibee, 2004):

1. Familiarisation with the data - rereading and repeatedly listening to all of the data material several times
2. Identifying a thematic framework – annotating data with memos regarding ideas, concepts and categories arising from the data
3. Indexing – sifting the data and highlighting quotes that present links both within data and between different data
4. Sorting individual comments into groups that answer the questions from either the questionnaire, focus group or interview or into a group of irrelevant comments
5. Interpretation – Make sense of the data through analysing individual quotes and observing the relationship between different quotes and groups of quotes.

RELIABILITY AND VALIDITY

Reliability is focused on the question of whether the results of a study are repeatable and whether the measures that are created for concepts in the social sciences are consistent (Bryman, 2008). Three factors involved with reliability are: stability which questions if results are stable over time; internal reliability which considers if indicators on a measurement scale are consistent; and inter-observer consistency that analyses if multiple observers measure in a similar way. Consequently, Joppe (2000) describes reliability as:

The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. (p.1)

Validity is focused on the integrity of the conclusions that are produced from a piece of research. Therefore, it explores if a research study explains or measures that which is presented in the original objective (Bryman, 2008). Mason (1996) suggests that in terms of validity the researcher needs to be asking “how well matched is the logic of the method to the kinds of research questions you are asking and the kind of social explanation you are intending to develop” (p. 147). Four types of validity are typically defined. Measurement validity refers to whether a measure of a particular concept does reflect the concept, internal validity questions if a conclusion that suggests a casual relationship is valid, external validity asks if the results can be generalised outside of the study and ecological validity questions if findings are applicable to participants’ everyday contexts (Bryman, 2008).

However, both of the definitions of reliability and validity outlined above might be considered focused on concepts of measurement and testing and subsequently are more relevant to quantitative rather than qualitative studies. When evaluating qualitative research the traditional concepts of reliability and validity “require redefinition in order to fit the realities of qualitative research” (Strauss & Corbin, 1990, p. 23). Therefore, qualitative researchers have looked for different ways to either adapt these definitions or to create new criteria for evaluating qualitative research (Mason, 1996; Stenbacka, 2001; Trochin, 2006).

Lincoln and Guba (1985) suggest that reliability and validity are not relevant for evaluating the soundness of qualitative research and alternative criteria should be used. They suggest that qualitative studies should be evaluated by analysing trustworthiness and authenticity (Denzin & Lincoln, 1994; Lincoln & Guba, 1985). Trustworthiness is measured by considering: credibility; transferability; dependability; and confirmability. Authenticity uses a criteria of: fairness; ontological authenticity; educative authenticity; and catalytic authenticity (Denzin & Lincoln, 1994; Lincoln & Guba, 1985).

Due to the small scale and purely qualitative nature of this study, I based the evaluation of the quality of the research on Lincoln and Guba's (1985) criteria for measuring trustworthiness, which is seen as an alternative method of establishing and evaluating validity and reliability (Bryman, 2008). I avoided using their criteria for authenticity as it is focused on the wider political influence of the study, which is not relevant to this small scale masters study (Bryman, 2008).

Bryman (2008) explains that the criteria of credibility, as a measure of a study's trustworthiness, is concerned with the "several possible accounts of an aspect of social reality" (p. 377) and how credible is the account of a social situation offered by a researcher. In terms of this study I used the technique of methodological triangulation in order to strengthen the validity and credibility of the findings (Denzin, 1970). Creswell and Miller (2000) state that triangulation entails "a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study" (p. 126). Consequently, in this study I used three different methods of data collection, the questionnaire, the semi-structured interview and the focus group, and three different data collection sites. However, in each data collection method I used similar questions and in each participating organisation I used the same questionnaire and focus group/interview schedules. In this way the findings from different data collection methods and or different data collection sites could be used to seek convergence in the conclusions that I drew from the data.

One of the aims of quantitative research is to produce findings that can be transferred to other settings and thus shared beyond the context of the study (Malterud, 2001). However, as Bryman (2008) explains, this is not the case with qualitative research, he states:

because qualitative research typically entails the intensive study of a small group, or of individuals sharing certain characteristics (that is, depth rather than the breadth that is a preoccupation in quantitative research), qualitative

findings tend to be orientated to the contextual uniqueness and significance of the aspect of the social world being studied. (p. 378)

Subsequently, I have not been concerned in this study with matters of generalisation. However, I have enhanced the possibility of transferability by providing throughout chapters three, four and five of the study a detailed description of the research context and the “assumptions that were central to the research” (Trochin, 2006, p. 1). This then provides others who may be interested in transferring the findings to different contexts with adequate information to make this transfer possible (Bryman, 2008; Lincoln & Guba, 1985, Trochin, 2006).

The concept of dependability within the qualitative paradigm is described by Trochin (2006) as an idea that “emphasizes the need for the researcher to account for the ever changing context within which research occurs” (p. 2). Whilst the idea of confirmability is concerned with showing that the researcher has acted in good faith and “has not allowed personal values or theoretical inclinations manifestly to sway the conduct of the research and findings deriving from it” (Bryman, 2008, p. 379). In order to ensure that dependability and confirmability have been adhered to then researchers should adopt a transparent approach to documenting all the relevant steps, decisions and strategies used for checking the data made throughout the research study (Lincoln & Guba, 1985; Trochin, 2006).

Accordingly, in this study, throughout chapters three, four and five I have strengthened the trustworthiness criteria of dependability and confirmability by clearly outlining all stages of the research process. I have also explained how and why decisions were made, ensuring that they were sustained by the data collected and that the findings transparently describe the issues being researched. Furthermore, I explicitly aimed to remove any source of bias from the questions used in the interviews and focus groups and throughout these data collection methods I employed a strategy of respondent validation. This was carried out by clarifying with participants of the interview and the focus group if they understood each question

and afterwards providing them with an electronic copy of the transcript to offer them the opportunity to comment on any inaccuracies.

ETHICAL ISSUES

Typically, ethical issues can be viewed through both a philosophical and a practical lens. Philosophically the debate explores the issue of personal sacrifice, versus benefits for the greater community (Wilkinson, 2001), whilst 'practically' concerns focus on protecting people and as a result minimising the harm to participants. Therefore, in this study it was not acceptable to place an unnecessary burden on any staff member in one of the participating schools, even though I may have believed that the benefits for the educational community were of greater importance.

Protecting the rights of individual participants is at the core of ethical issues in educational research. In terms of ethical considerations relating to studies in which human participants are used, it is important to look after people's welfare, maintain confidentiality, protect their safety and observe any social sensitivities (Irvine & Gaffikin, 2006). With regards to qualitative research, Halai (2006) states that there are five key ethical principles that are common across the board. These include: "a) informed and voluntary consent; b) confidentiality of information shared; c) anonymity of research participants d) beneficence or no harm to participants; and e) reciprocity" (p. 5). From a practical perspective these key principles can be met by ensuring that participants in the study have been given as much information as possible regarding what taking part will involve and that participants' anonymity is preserved throughout the research (Gibbs, 1999).

Before commencing this study I submitted and gained ethics approval from the relevant committee at Unitec. In order to address the ethical issues of informed consent and preservation of rights to anonymity in this study, I provided participants with information sheets outlining the details of the study and what their taking part would involve (see Appendices Four to Six). In these documents the key elements

of the research were outlined, including: purpose; procedures; time period; risks; benefits; and a statement that participation was voluntary and participants had the right to withdraw from the study (Halai, 2006). I then provided all participants the opportunity to ask questions regarding the study, before I obtained signed consent from those taking part and from the Principal and BOT chairperson of each of the three schools involved. By providing participants with as much information as possible regarding the study, I reduced any possibility of deception and minimised the harm of the research.

I minimised the psychosocial harm of the study by making sure that participants' privacy was protected and that their personal details were not revealed in the findings, thus using pseudonyms throughout the work. I also ensured that information collected in the focus groups or the semi-structured interviews was made available for the participants to review, change or detract if they so wished and that any information collected in the course of the study was secured safely.

CONCLUSION: RESEARCH METHODOLOGY

This chapter has described the methodology and research method used in this research study. I have provided a rationale for adopting a subjectivist epistemological position, together with an anti-positivist paradigm and qualitative study approach. I have justified the choice of questionnaire, semi-structured interview and focus group data collection methods and explained the reasons for using combined methods of purposive and convenience sampling. Finally, I have justified the use of a general inductive approach to data analysis, described the criteria I have used to judge trustworthiness and presented how I examined ethical issues relating to the study. In the next chapter I will display the findings that this research methodology and data collection methods provided.

CHAPTER FOUR: RESEARCH FINDINGS

INTRODUCTION

The purpose of this chapter is to present the findings from the questionnaire, focus groups and semi-structured interviews that were carried out as described in the previous chapter. This chapter is divided into three sections. The first section presents the findings from the individual questionnaires that were completed by teachers who had experienced the implementation of the revised New Zealand Curriculum in all three organisations that I visited. In the second section, findings from the semi-structured interviews that were conducted with senior curriculum leaders are presented and summarised. Finally in the third section I have presented the findings from the three focus groups carried out with subject leaders in each organisation.

TEACHER QUESTIONNAIRE FINDINGS

Introduction

The findings in this section are organised around each of the six questions in the questionnaire, which was given to all of the teachers who had experienced the implementation of the revised curriculum in each of the three participating schools. In total 140 teachers returned the questionnaire out of a possible 180 teachers working in all of the three schools. In each section I have presented a table that summarises participants' ticked responses to the statements offered, together with a summary of each of the themes explored in the comment sections. Within the findings I have labeled the schools and their participants A, B and C.

Implementation and change

Question one of the questionnaire asked:

Has the implementation of the revised New Zealand Curriculum demanded that you change your practice?

Table 4.1: Participant responses to changed practice

AVAILABLE STATEMENTS	SCHOOL	SCHOOL	SCHOOL	TOTAL
	A	B	C	RESPONDENTS
No, it has not changed anything	10	21	17	48
Yes, it has changed my beliefs about teaching	7	2	12	21
Yes, it has changed the content of what I teach	15	5	14	34
Yes, it has changed the strategies that I use to teach	27	9	11	47
Other (<i>please specify</i>)	1	1	1	3

Figure 4.1: Participant responses to changed practice

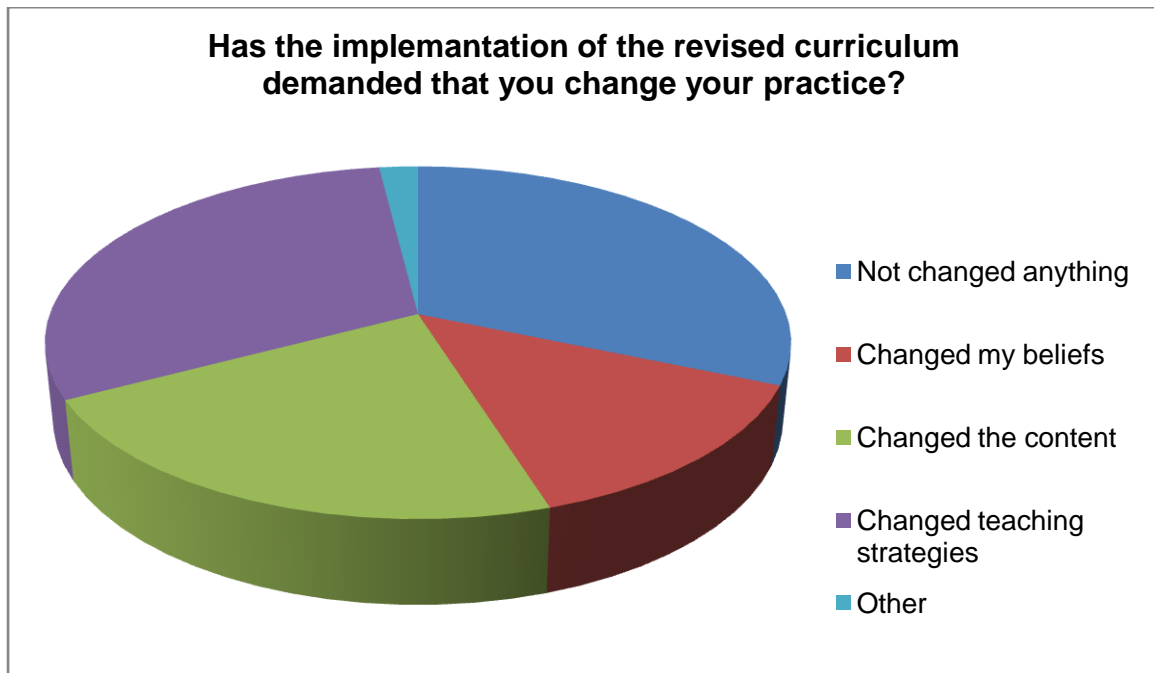


Table 4.1 and figure 4.1 show that there was a wide and varied difference in opinion, both within schools and between schools, regarding if the revised New Zealand Curriculum demanded teachers to change. 58% of respondents felt that the revised New Zealand Curriculum had led them to change their teaching strategies and/or the content of what they teach and this was particularly true in school A. Fewer

teachers, only 15%, felt that the implementation of the revised curriculum had changed their beliefs about teaching, whilst 34%, the highest number of respondents for any one category, believed that the implementation had not changed anything.

The idea that that the implementation of the revised curriculum had led to a change in the content of what was being taught and a change in the strategies being used, was also expressed in comments that teachers added to their response. For example, these are quotes expressed by three different teachers which reflect what several teachers said in each of the three schools:

A: It has widened my horizons on the goals of our society related to what and how I teach.

C: I now take a facilitative approach to teaching and look to co-construct the learning with my students.

C: It has increased the need to use literacy and thinking strategies more. I need to be more contemporary with content.

Comments provided in relation to question one of the questionnaire showed that the reasons for teachers not changing anything, in response to the implementation of the revised curriculum, were both wide ranging and not necessarily a negative response to the curriculum document. These comments can be summarised into two groups. Firstly, those that had not changed because they were new to teaching and therefore had only ever used or been trained to use this curriculum. This opinion can be seen in comments such as these written by two teachers from different schools:

B: As a second year teacher I have nothing to compare with it.

C: I have just started this year and as a first year teacher we were introduced to the new curriculum at university last year.

Secondly, there was a group of more experienced teachers who expressed an opinion that implementation had not required them to change anything because the

way that they taught already reflected the content, principles and pedagogy of the revised document. For example these three teachers wrote:

A: It seems to resonate with what I already do.

A: Reinforced how I teach with a holistic method.

B: I still use the same strategies of inquiry that I have always used.

Finally, in response to question one of the questionnaire there was also a further group of comments made suggesting that some teachers were aware that the revised curriculum presented a need for some change, however they were either critical of this need or confused by how it should be carried out. There were three comments of this nature and all expressed by teachers at school C:

C: The revised curriculum has created extra activities for students to do, but no awareness by students of their purpose.

C: The focus has changed to character development on which we have not been trained.

C: Requirements for the key competencies are still unclear. Are they to be assessed (how), judged, reported on?

Overall, the responses to this question gave a sense that most teachers understood that the revised New Zealand Curriculum presented a need to change from what was being done previously. However, what needed to be changed and to what measure clearly was an individual response that was different for different teachers depending on their school, their experience and their own opinions and feelings.

Professional development support for the implementation

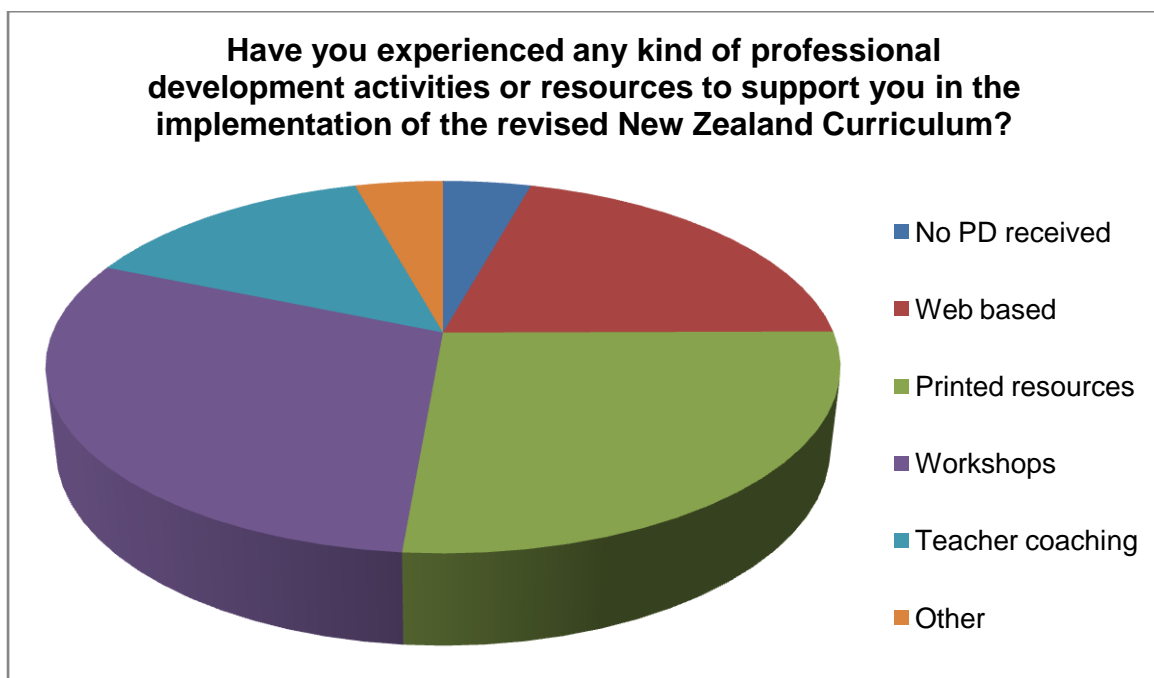
Question two of the questionnaire asked:

Have you experienced any kind of professional development activities or resources to support you in the implementation of the revised New Zealand Curriculum?

Table 4.2: Participant responses to professional development support

AVAILABLE STATEMENTS	SCHOOL	SCHOOL	SCHOOL	TOTAL
	A	B	C	RESPONDENTS
No, I have not received any professional development	0	10	1	11
Yes, internet/web based written resources	23	7	23	53
Yes, printed resources	26	15	27	68
Yes, workshops	30	14	33	77
Yes, coaching or mentoring	19	7	11	37
Other (<i>please specify</i>).....	7	2	2	11

Figure 4.2: Participant responses to professional development support



It is clear from table 4.2 and figure 4.2 that 55% of the respondents had experienced workshops to support their implementation of the revised curriculum. This was closely followed by printed resources, indicated by 49% of the teachers, and web

based support, 38% of the teachers. Only a small number, 8% of the teachers, felt that they had not received any professional development support.

The high number of teachers who had experienced workshops and printed resources as implementation support is unsurprising, as all teachers in the country were in 2009 offered attendance at 'jumbo' days which followed a workshop format and were presented by teachers or facilitators coordinated by the Ministry of Education and the Post Primary Teachers Association (PPTA) teachers union. At these workshops printed material was also supplied to teachers in order to assist them in their planning of the revised curriculum. However, clearly not all teachers experienced this opportunity because 11 of the teachers, ten of which were from school B, indicated that they had not experienced any professional development to support the implementation of the revised curriculum. Although, the reason for this disparity is possibly explained later in the interview findings relating to school B, as it is made clear in this interview that implementation of the revised curriculum was optional for senior teachers in this school.

Table 4.2 and figure 4.2 also show that internet/web based resources were experienced by 38% of the teachers spread amongst all three schools. Included in the comments relating to this question were a number of positive statements that praised the effectiveness of certain websites, for example:

A: There are many great resources on the website Arts online.

C: The English community on-line are onto it.

In contrast, it can be seen that only 26% of the teachers had experienced coaching and mentoring as a form of professional development that supported their implementation of the revised curriculum and those that had were mainly working in schools A and C. This was explained further in the interviews carried out at these two schools, which I will present later in this section. In these interviews it became apparent that coaching was not provided explicitly to implement the revised

curriculum, but as part of other initiatives such as the literacy project or the Te Kotahitanga project with which schools A and C are involved. The Te Kotahitanga project is a nationwide professional development project in which teachers work with a teacher coach who supports them to reflect upon their own theorising and the impact of that theorising upon indigenous Maori students in their classes.

Finally table 4.2 and figure 4.2 show that 8% of the respondents indicated that they had experienced 'other' forms of professional development in order to support their implementation of the curriculum and this was specified to be 'cluster groups', 'discussion groups' and 'department meetings'. The central theme of all these responses was that teachers spent time meeting and talking with their colleagues both in their own school and from other schools as a form of professional development. This response was also supported by six comments relating to this question that cited 'cluster' or 'discussion' groups as the primary professional development that teachers experienced in order to support their implementation of the revised curriculum.

Professional development and sustained change

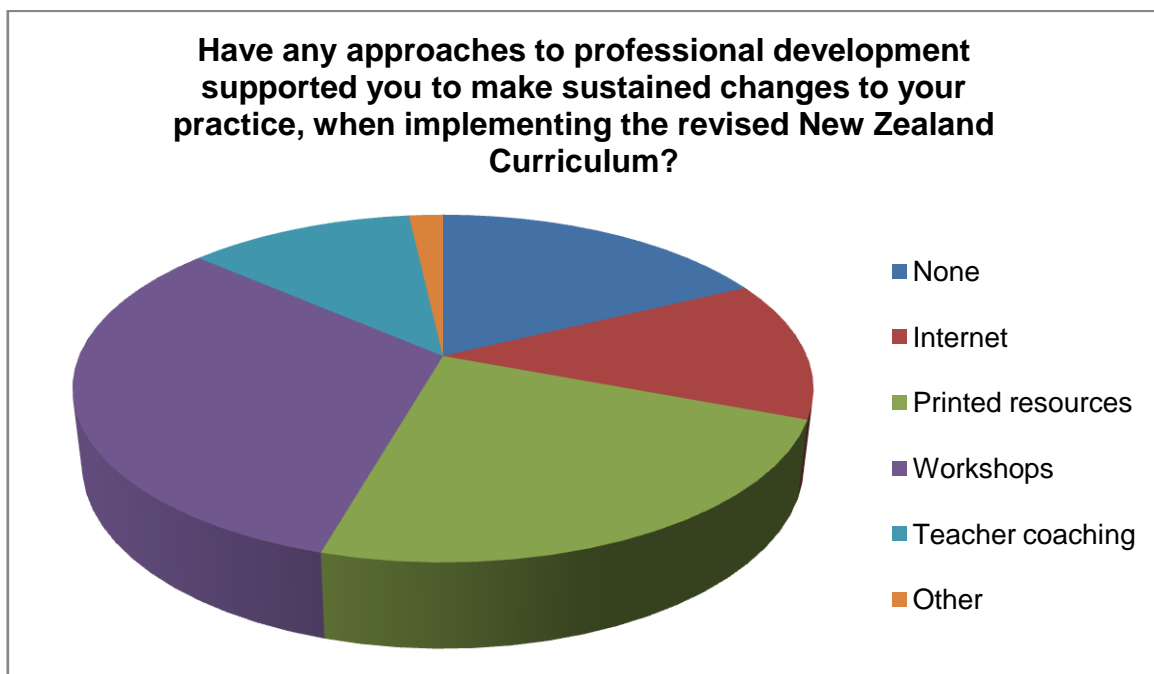
Questions three and four were linked by the theme of professional development and so I will present and discuss the findings of these two questions together. Question three asked:

Have any approaches to professional development supported you to make sustained changes to your practice, when implementing the revised New Zealand Curriculum?

Table 4.3: Participant responses to professional development approaches that supported sustained change when implementing the revised curriculum

AVAILABLE STATEMENTS	SCHOOL	SCHOOL	SCHOOL	TOTAL
	A	B	C	RESPONDENTS
No, none of the professional development supported me to change my practice	6	16	8	30
Yes, internet/web based written resources	9	3	10	22
Yes, printed resources	15	8	17	40
Yes, workshops	24	5	25	54
Yes, coaching or mentoring	8	2	10	20
Other (<i>please specify</i>)	0	3	0	3

Figure 4.3: Participant responses to professional development approaches that supported sustained change when implementing the revised curriculum

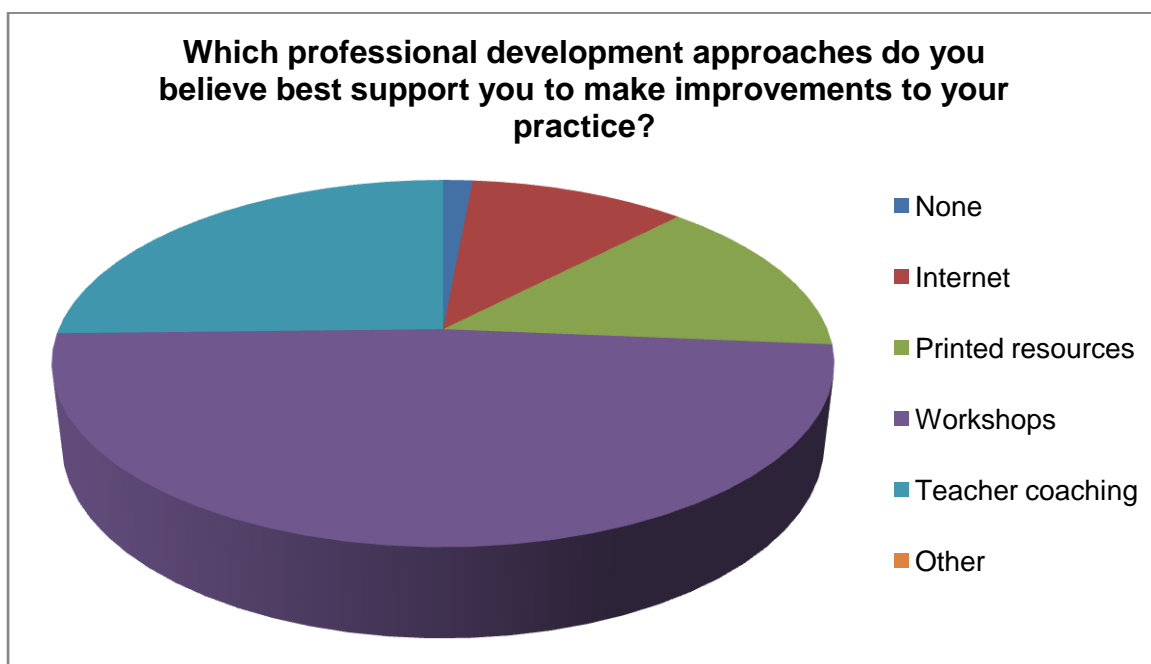


Question four of the questionnaire was also focused on professional development and inquired: Which professional development approaches do you believe best support you to make improvements to your practice?

Table 4.4: Participant responses to professional development approaches that supported sustained change

AVAILABLE STATEMENTS	SCHOOL	SCHOOL	SCHOOL	TOTAL
	A	B	C	RESPONDENTS
None	0	3	0	3
Internet/web based	8	7	7	22
Printed resources	12	5	12	29
Workshops	36	26	37	99
Coaching or mentoring	18	15	19	52
Other (<i>please specify</i>)	3	1	2	6

Figure 4.4: Participant responses to professional development approaches that supported sustained change



It can be seen in table 4.3 and figure 4.3 that 39%, the highest number of teachers in any one category, believed that workshops provided to support the implementation of the revised document were the most effective at leading them to make sustained change. This was closely followed by printed resources, which 29% of the teachers believed had led them to make sustained change to their practice. 21% of the teachers, felt none of the professional development that they experienced supported them to make sustained change. Table 4.4 and figure 4.4 show that outside of curriculum implementation, workshops are also believed to be the form of professional development approach that leads to sustained changes in teachers' practice, with 71% of the respondents choosing this option.

The belief of 30 teachers that professional development provided to support the implementation of the revised curriculum led them to make no changes, was also reflected in a number of comments relating to this question, which expressed five reasons why teachers felt professional development had not supported them to make sustained change. These reasons were: poorly trained facilitators; professional development sessions being too short; a lack of follow up to professional development sessions; a lack of specific professional development and a lack of planning. These opinions were expressed by respondents in the following ways:

A: No vision or plan about implementing. Some leaders have no real practical idea.

A: Last year at the jumbo day it was terrible, the teachers that facilitated only had one hours training and did not know what they were talking about.

B: Change requires focused professional development of three to four hours, not a 40min chat.

C: In a minor way but lack of follow up at faculty level has hindered this.

C: None of the professional development is specific or practical enough.

However, these teachers were in the minority as the majority of teachers felt that professional development had supported them to make some sustained change to

their practice and in particular printed resources and workshops scored highly. This is unsurprising as we saw previously that these forms of professional development were the ones most experienced by teachers implementing the revised curriculum, as was shown in the findings to question two.

Coaching and mentoring stands out because it is an approach that only 14% of the respondents felt supported them to make sustained change to their practice when implementing the revised curriculum. However in contrast 37% of the respondents felt that coaching was the best professional development approach to help make improvements to their practice overall. Taking into account that in question two, only 26% of the respondents had experienced coaching or mentoring as part of their curriculum implementation support, this may explain why relatively low numbers of teachers believe that it helped them to make sustained changes, whilst a high number of teachers believe that outside of the revised curriculum implementation it was an effective professional development approach. Furthermore, if coaching is being provided as part of curriculum implementation support, or as part of another professional development project, one teacher from school C raised a valid point in response to question four, they wrote, “coaching and mentoring is only as good as the coach”.

Once again, similar to question two, a number of teachers used the ‘other’ and the comment sections to express their opinions regarding the benefits of discussion with colleagues in the form of ‘cluster groups’, ‘subject associations’, ‘department discussions’ and ‘cross school discussions’. Five teachers expressed this belief:

A: Sharing experiences and discussion approaches with professionals from other schools helps us understand other approaches.

A: I believe department meetings are useful, even to just go through printed resources. This way we can discuss and process ideas together.

B: Networking.

C: Subject associations provide excellent workshops.

C: Group/collaborative planning in departments and across school.

A final point that was raised by a number of teachers in response to questions three and four is that one professional development approach alone will not make sustained change or improvements to a teachers' practice, but a combination of several approaches working together is required. Two teachers working in schools A and C wrote:

A: Not one approach in isolation.

C: The best is a mixture of school based professional development, workshops hosted by Team Solutions and support materials from techlink.org.nz.

Teacher needs and criticisms

Questions five and six of the questionnaire were more open questions that called for participants to share their thoughts regarding implementation of the revised curriculum, sustained change and professional development. The questions asked:

5. Is there anything not already covered you would like to add regarding the implementation of the revised New Zealand Curriculum and sustained change in teachers' practice?

6. Is there anything not already covered you would like to add regarding professional development support and implementation of the revised New Zealand Curriculum?

Due to the fact that these were more open questions they tended to elicit responses upon a broad range of topics, although most were focused on the topic of implementation of the revised New Zealand Curriculum and sustained change in teachers' practice. The responses to question five could be grouped into three categories: requests for more time or resources; criticisms of the implementation process; and praise for the curriculum document or the implementation process.

Requests for more time and resources

From the respondents in all three schools there were 21 comments associated with requesting more time or resources to support the implementation of the revised curriculum. The following four comments from teachers in all three schools, reflect the comments made by all the teachers who requested more time:

A: Time needs to be provided to write and to have resources checked.

B: More time allowances.

C: Professional development time away from school is vital to allow clarity of thought.

C: Further time for reassessing what is being done – ways to network and to make changes.

Comments that requested more resources could be grouped around physical resources, such as more printed exemplars and access to websites, or professional development resources such as greater opportunities to network with other colleagues. This is a sample of what teachers across all three schools wrote:

A: More printed posters and large displays should be made available for teachers to put into rooms and sample of units and lessons to see what they could look like.

A: We should be provided with models of lesson/unit plans that indicate revised New Zealand Curriculum input.

B: Provide exemplars to support our planning.

C: Lots of support on-line and in school is still needed. Especially individual professional development that meets individual teacher needs. The blanket approach doesn't develop me!

Criticism of the implementation

Six teachers across all three schools used question five to criticise the curriculum document or the implementation process and to raise concerns about how the implementation had been carried out in their school. Two reasons were given that included the speed of change being too quick and a lack of clarity regarding what was needed or wanted from teachers. Selected respondents wrote:

A: Too fast, expecting change in a small time frame.

A: The implementation was too rushed. We need access to more workshops, modelling and good exemplars.

B: Changes are at times made too fast. Teachers are hugely busy so being given more time to make the changes should lead to a smoother journey.

B: Be clearer about changes.

C: Lack of direction, resources, time makes it difficult for teachers to implement.

C: The curriculum is too vague in terms of practical expectations and applications.

Praise for the curriculum

A smaller number of respondents, four in total across two of the three schools, used question five to praise the curriculum document, the principles underlying it or the process followed to design and implement it. They wrote:

A: I fully support the beliefs underpinning this.

A: I think it is a great initiative but one that will take time to translate into existing units of work and approaches.

C: I think the New Zealand Curriculum is on the road to some fantastic changes.

C: The implementation has gone through a very good process, very informative with all parties being involved, hence a very good buy in.

Overall the respondents to question five show once again that within the teaching community, both in the same school and between different schools, there is a wide range of experiences, opinions and desires regarding how individual teachers have reacted to the implementation of the revised New Zealand Curriculum and the sustained change it requires.

Criticism of professional development and requests for more

As question six was also an open question it too elicited a wide range of responses regarding professional development and the implementation of the revised curriculum. Nine comments were made that criticised the professional development support and once again a lack of time featured heavily in teachers' comments, however the quality of professional development was also criticised. These comments reflect what all nine teachers wrote:

A: Not enough, not enough time!

A: As a Head of Department (HOD) and 'leading' the changes it would be good to have had time to 'train' ourselves to be 'up with the play' before having to 'teach' ourselves.

The professional development support that was available – some was better than others.

B: No professional development of any worth has been offered no time allowance has been offered.

C: You cannot change people without sufficient time allowed by schools.

The other type of comment that question six drew from teachers was that of suggestions to improve the professional development, or a need for professional development of a different kind, depth or length, as shown in the following example comments:

A: Further workshops would be appreciated as a follow up process so teachers can share ways to implement changes.

A: More subject specific professional development would help.

B: Need more professional development in cluster group form.

C: We need more peer coaching, constantly developing ideas. Using student feedback.

These comments also support the findings of questions three and four, which showed that with regards to professional development teachers value workshops, coaching and the opportunity to share ideas with colleagues in cluster groups or department meetings.

SENIOR LEADERS OF CURRICULUM AND PROFESSIONAL DEVELOPMENT.

SEMI-STRUCTURED INTERVIEW FINDINGS

Introduction

The semi-structured interviews were carried out in each of the three schools with senior leaders who are responsible for curriculum implementation and professional development. In school A this involved interviewing one Associate Principal and one Deputy Principal at the same time. In the findings these participants have been labelled 1A and 2A. In schools B and C this involved interviewing one Assistant Principal in each organisation, they have been labelled 1B and 1C. Interviews took place in the office of the participants and followed a similar structure, seen in the interview schedule (see Appendix Two). However, due to the interviews following a semi-structured format the actual wording of the questions were at times changed depending on the context of the interview, or in response to something one of the participants had said. The findings are structured around the questions asked in the interviews which create the section headings and the responses have then been presented in thematic groups.

The ways that the revised New Zealand Curriculum has challenged teachers to change their beliefs, knowledge, skills and teaching practices

Each interview began by exploring how senior leaders felt the revised New Zealand Curriculum has challenged teachers to change. The participants held widely different views regarding this topic depending on the context of their school and the approach to implementation that they had chosen to take. However, senior leaders' responses could be summarised into four themes: limited school-wide change; minor school-wide change; major school-wide change; and teacher dependent. Below I have discussed these themes in greater detail and presented the participants' key thoughts.

Limited school-wide change

The implementation of the revised New Zealand Curriculum has challenged teachers to change their beliefs, knowledge and skills only in a limited way, was a response unique to the Assistant Principal of school B. He explained that after much discussion the SMT had come to the conclusion that the revised curriculum did not fit with the International General Certificate of Secondary Education (IGCSE) assessment that 70% of the senior school used. Therefore, as a school they had chosen to focus on experimenting with implementing the new curriculum primarily in years 7 and 8, which is the intermediate area of the school that educates students aged 11 and 12 years old. Teachers in the senior school, who teach students aged 13 to 18 years old, were allowed to choose if they wanted to implement the principles and pedagogy of the new curriculum. He explained:

1B: In this school we have a IGCE fit, the curriculum doesn't necessarily fit NCEA, it certainly doesn't fit IGCE and that would be our position on that. And the curriculum, yes the curriculum is there but it is limited because does it fit our college's needs? What we are saying is this, those teachers who want to do it will do it, so what's happened is it's been a far more wide ranging aspect in Y7 and Y 8 than in Y 9 and Y 10.

Practically, this approach has meant that teachers in school B have not been challenged to change in the same way as teachers in schools A and C. As the

senior leader in school B explains above, those teachers that have chosen not to implement the revised curriculum in this school have been allowed to carry on teaching in the same way as before, due to the fact that the school currently gains high IGCSE pass rates and that is their primary concern.

Minor school-wide change

The Assistant Principal in school C expressed an opinion that the teachers in their school found it easy to adapt to the new achievement objectives, which are referred to as the 'back of the book' simply because they are positioned in the back part of the New Zealand Curriculum document. She explained in the following statement, that teachers felt comfortable with implementing these objectives because they did not require a big shift in thinking compared to previous practice:

1C: We quickly realised as leaders that there were two parts to it. Teachers were comfortable with the Achievement Objectives at the back because it was about tweaking some changes but it was still about content and what they are comfortable with.

In contrast, the teachers in school C found the level of change required as more dramatic when they were presented with the 'front of the book'.

Major school-wide change

The principles, values, key competencies and pedagogy of the revised curriculum that appear in the front of the document and thus are referred to as the 'front of the book' required a major shift in beliefs, knowledge, skills and practice for teachers in schools A and C. The senior leaders in schools A and C explained:

1A: Strategically we started with what do we want a leaving high school student to look like, what are we aiming towards and trying to break down our pure subject focus, where departments worked in isolation. Getting departments talking and getting them to plan stuff together and creating ways

of doing that around house meetings and form meetings structures, creating an infrastructure to allow those kinds of conversations to take place.

1C: The front of the book was a huge change for teachers' theories in their head about what learning is all about, a huge shift in thinking about pedagogy and the whole purpose of teaching and what we are there for.

What had to happen doesn't necessarily mean it's fully implemented now. The main change really, is about changing to being student centred, changing from being content driven to being student driven and that's been a really hard shift.

However, these senior leaders felt that this challenge to change was not experienced by all teachers in their schools.

Level of change is dependent on the individual

Both senior leaders in schools A and C believed that the level of change teachers have had to make in order to implement the revised curriculum has been dependent on how the practice of individual teachers complimented or conflicted with the principles and pedagogy of the document. They explained:

1A: It depends, in some areas there were huge shifts that were required and there probably still are and in other areas they were very innovative and were doing that type of thinking based approach anyway.

1C: It's a huge shift. You've got your early adopters who are flying, you've got your ones that are struggling anyway.

Overall it is clear, from the opinions expressed by the senior leaders in all of the three schools, that the introduction of the revised New Zealand Curriculum has challenged teachers in different ways to change their beliefs, knowledge, skills and teaching practices. The next section of the findings explores some of the approaches to professional development that the senior leaders used in order to support teachers to make these changes.

Professional development approaches used by senior leaders to support teachers to make sustained changes when implementing the revised New Zealand Curriculum

In this section of the interview the questions focused on what approaches to professional development have the senior leaders adopted in order to support the implementation. At this stage of the interviews the participants were not asked to make judgements on the effectiveness of these strategies, but only to share which approaches had been trialled. The responses could be grouped into five broad themes: structural timetable change; school-wide in-house professional development; tie-in to current professional development projects; school-wide external professional development; and link to accountability and school-wide appraisal.

Structural timetable changes

All of the senior leaders described structural changes that they had made to the timetable in order to create experiences for the students that reflected the student centred, learning to learn and inquiry teaching philosophy which they believed the revised curriculum document demanded. Although, the approaches in each school were very different the effect was the same, in that it changed the way that the students experienced learning. The senior leaders in all three schools explained:

2A: The other thing that we have done which has been a big structural change, is in term 4, is something that we are calling project 72. That is a three day event that is cross curricular and involves all of our staff and students.

1B: Teaching very much using three styles, seminar 70 we call it, so 70 kids in the class and breaking it down into groups of 20. Three teachers within that facilitating three styles of learning, so facilitating a kinesthetic, auditory and a directed learning. We also trialled four periods of English with the same teacher, with each lesson going in a different style.

1C: In the Poutama classes the traditional boundaries aren't there. You have one teacher teaching several subjects. So on one day you might have only two teachers in the classroom and on other days you might have four.

Although these structural changes may not be seen as a traditional professional development approach, in all three schools the effect was developmental for those teachers who were involved in these initiatives, because they all had to do things differently to the way that they had taught previously. The senior leaders believed that by being involved in these projects and by working alongside other colleagues this had then encouraged teachers to change their practice. How structural changes work as a form of professional development was described by the Assistant Principal of school C:

1C: I think being involved in something like our Poutama classes will move teachers more, because of all that theory of professional development that says if teachers see it working then they are more likely to change what they are thinking. That will change them, but it is about them being involved in it, but so it is not so far out of their comfort zone that they don't want to engage.

Further to these timetable changes all four senior leaders also drew on the expertise of their staff to lead professional development that supported the implementation of the revised New Zealand Curriculum.

School-wide in-house professional development

Across the three schools the senior leaders created a variety of in-house professional development groups in order to support the implementation of the revised New Zealand Curriculum. These were: whole staff; cross-curricular; faculty; teachers of a year level; subject leaders; and SMT. In terms of the approach that these professional development opportunities took, again there was a wide variety used, including workshops, discussion groups, and presentations. The senior leaders in the three schools explained:

2A: The first step was whole staff professional development having those sorts of conversations. So we didn't employ experts from outside, we just did it ourselves.

We also changed the structure so we had these house meetings twice a term, where teachers have a meeting in their house groups, not in their subject areas. Out of that this year came a curriculum implementation group that has got representation on it from all subject areas.

1B: In terms of bringing the new curriculum into play in Y 7 and Y 8 we had professional development run by me and run by two teachers who had gone across every child matters in the UK. Professional development was also in a sense faculty based, we had a curriculum director who went around the faculties giving professional development purely related to the New Zealand Curriculum.

1C: We had specific front of the book days, where we had days specifically to do with the front of the book. These were whole school, mixed groups, cross-curricular groups and interest groups, especially focusing around key competencies.

From these findings it is clear that within the same school and between the three schools there were a wide range of in-house professional development approaches used to introduce and implement the revised curriculum document. However, it can be seen that one theme which connects all of these approaches is the opportunity for groups of staff to come together and discuss and share their ideas with one another.

Providing opportunities to link the implementation of the revised curriculum to current practice, particularly in relation to ongoing professional development projects was also a topic explored by the senior leaders in schools A and C.

Tie-in to current professional development projects

As I have outlined above, in schools A and C they did have explicit professional development in order to support the introduction of the revised New Zealand Curriculum document, however another in-house approach that they also used was

to link the professional development support with current and ongoing professional development projects or groups. This was described by the senior leaders in schools A and C:

1A: Yes, and we worked in our existing groups, clusters or whatever. I got involved in a Principals' cluster, a Team Solutions contract to get Principals together.

1C: Then we have tried to tie the pedagogy, that whole page of effective pedagogy to Te Kotahitanga, which fits very nicely, but again there is a huge shift in thinking.

We have tried to make the front of the book shift through Te Kotahitanga. So that's coaching.

The senior leaders in both of these schools expressed their opinion that by linking professional development objectives and approaches together, then time and resources were pooled, which was a benefit for the staff. Alongside the in-house professional development, the leaders of schools A and C also drew on external facilitators.

School-wide external professional development

There was a wide variety of formats and approaches to external professional development used across schools A and C, including: external facilitators carrying out workshops with all staff; cluster meetings with staff from other schools; national and international conferences; and leaders seminars. The interviewees explained:

2A: We targeted two elements, we targeted differentiated learning and thinking skills, so we had some specific professional development around that with an external facilitator.

1C: With the New Zealand Curriculum we had an external facilitator in a couple of times, teachers going off to e-learning, secondary futures, and there was quite a few leaders seminars.

Curriculum leaders went off to courses, I promoted that, if they applied for it and it came up, then I was really fostering that as a key professional development target or focus.

Once again, the theme linking all of these approaches to external professional development is opportunities for teaching staff and school leaders to gather with their colleagues, both from their own school and from other schools and to share ideas and expertise. In contrast, the final section of the findings for this question focused on accountability and appraisal, which is a form of professional development that did not allow colleagues to discuss or share ideas,

Link to accountability and school-wide appraisal

Although appraisal and senior leaders checking documentation may not be considered by some to be a form of professional development, the leaders in all three schools did believe that this kind of accountability, which was linked to the implementation of the revised curriculum, had supported teachers to change and develop their practice. This approach to teacher development was best described by the senior leader of school A:

2A: Hand in hand with the professional development also comes the accountability side of things.

So the implementation has been a combination of targeted professional development and requirements of HODs which is linked to appraisal.

Overall, the senior leaders' responses show that no single approach or format of professional development was used by the three schools, instead all of the schools purposively chose to use a range of different types of professional led by staff drawn from their own teachers or by facilitators from outside agencies. All of these opportunities involved different groups of staff meeting together to share ideas and experiences. Significantly, all of the professional development approaches used by the senior leaders involved staff meeting face to face with facilitators and each other, rather than relying on printed or web based material. The next question in the

interviews focused on evaluation of these professional development approaches to determine shifts in teachers' practice and how was this shift measured.

Successful professional development approaches that led to sustained changes in teachers' practice and how shifts in practice were measured

In terms of evaluation, the questions were focused on two areas, firstly evaluation regarding the fidelity of implementation and if teachers in their classrooms were adopting the principles and pedagogy of the curriculum document, and secondly evaluating if implementation of these principles and pedagogy had led to improvements in students' learning and achievement. Although none of the senior leaders felt that they had evaluated specifically the implementation of the revised curriculum, they did offer five suggestions regarding evaluation methods that they do use in order to measure teaching practices and student learning or achievement. These five areas were teacher submission of planning, appraisal, lesson observation, student assessment data, and student voice.

Did not explicitly evaluate

All three senior leaders felt that they had not explicitly set out to evaluate the success of their curriculum implementation plans and the subsequent initiatives that were carried out. Neither had any of the senior leaders specifically measured if by implementing the revised New Zealand Curriculum there had been a shift in teachers' practice or in students' learning and achievement. However, the different responses of the senior leaders in each of the three schools suggests that there were different reasons for this lack of evaluation, as these following statements show:

2A: I think it is difficult for us to untangle the influences because there have been lots of changes at the same time. So the whole range of the way that learners in the school engage with the staff and the way that they learn and the independence of their learning has changed.

Very, very difficult to do, you can't measure that in terms of results, like examination results, assessment results. I am not sure how we would measure that other than anecdotally. Not sure.

1B: Do we put that at risk to implement the New Zealand Curriculum. What we are saying is this, those who want to do it will do it. Those who don't, have outstanding academic results.

1C: We haven't measured specifically the change in pedagogy. We have not deliberately gone in and looked at pedagogy shift.

Although there has not been a focus on evaluating shifts in teachers' practice and student outcomes linked to the implementation of the revised curriculum, all three schools do carry out some form of evaluation in relation to teaching and learning. Due to the fact that teaching and learning is the basis of the revised curriculum document, then these forms of evaluation do provide some evidence regarding the effects of implementing the revised curriculum in these three schools.

Methods used to evaluate shifts in teachers practice

The senior leaders explained that there were three strategies that they used to evaluate teachers' practice. These were, checking planning, lesson observation and appraisal. The senior leaders in schools A, B and C explained:

2A: One of the things that we are trialling now is within our observations we are looking for particular things. So at the moment we are focusing on the key competencies which we can already see it in their planning and then we look for it in their lessons when we do an observation.

1B: The teaching staff here are worked extremely hard to get exam outcomes. This is one of the few schools that targets. It sets targets at the start of the year and our appraisals are target based.

1C: So it's assessment data and teachers through appraisal observations.

Although these evaluations were not always purposively focused on implementation of the revised curriculum, it was acknowledged that evidence collected in these ways

did provide some data regarding how teachers had changed their practice, if it had been sustained and if it was leading to improved outcomes for students. All four senior leaders also complimented these methods of evaluation with evidence drawn from the students.

Methods used to evaluate shifts in student learning and achievement

Two methods were used throughout the three schools to gather evidence from the students, these were talking with the students, both formally and informally and gathering and analysing students' assessment data. The interviewees explained:

1A: Senior leadership walkthrough observations are focused on what evidence is there on the New Zealand Curriculum stuff. So if I sit down and talk to one of the students do they know what they are learning, why they have learnt it and how do they know that they have learnt it, type of conversations.

Measurable outcomes I'd say it's too early in its life span to tell, but from conversations that I have had with students they seem to have enjoyed some of the initiatives, they are certainly right into project 72, they get a lot out of that.

1B: This is a school on the up, people are hammering at the door to get in and we have gone from 30 % IGCE to 70 % IGCE and our grades are now as good as anyones and you can't bat the stats.

1C: We have been measuring in the school reports, the kids are being reported against curriculum levels. The curriculum area reports to the board have for the juniors' curriculum level shift. So we are measuring it in that way.

The interviewees' answers to how are senior leaders evaluating if teachers have shifted their thinking and practice in response to the implementation of the revised curriculum show that in all three schools evaluation has not been explicit and has not been a significant part of the implementation planning or action. However, in each

school some form of evaluation regarding teaching and learning does take place and this evidence provides a window into if changes in teachers' practice have been sustained and if they are leading to improvements in students' learning. The next section will explore which of the professional development approaches that were provided by the senior leaders led to sustained changes in teachers' practice.

The success of professional development approaches at sustaining changes to teachers' beliefs, knowledge, skills and practice

Senior leaders were asked to evaluate which of the professional development approaches they have been using have led to sustained changes in teachers' practice. I asked the interviewees not only to consider professional development that supported the implementation of the revised curriculum but also other major initiatives or projects with which the school had been involved. There were four approaches to professional development that were suggested by the senior leaders to be effective at changing teachers. These were: coaching and mentoring; colleagues sharing, cluster groups and subject associations; and a combination of approaches. The approach of sending teachers on one day courses was agreed to have the least impact on teacher change.

Coaching and mentoring

Although, coaching was mentioned by the leaders in all three schools, in schools A and B it was only in relation to support for provisionally registered teachers. However, in school C where the Te Kotahitanga professional development project had been running for several years, the use of coaching was common:

1C: Coaching, one on one, in terms of shifting teachers' practice, yes I would say the mentoring, working with the teachers, I get more shift that way.

So in school with the kids, the Te Kotahitanga model is great, which includes workshops and coaching. The difference is where you can actually engage in the teacher's theory, that's where you get the change happening. You need

to have teachers' theories in their head change or be challenged, to get sustained change.

As these comments show, the Assistant Principal in school C was confident that this kind of coaching model supported change in both new and experienced teachers.

Colleagues sharing

Both the senior leaders in school A felt that sustainable change had been achieved through the setting up of a cross-curricular curriculum implementation group. This had allowed subject leaders and teachers within the school to share and create ideas together. The interviewees in school A explained:

1A: In terms of the sustainability side it's just part of what we do. We have a professional development schedule and pretty much three out of ten sessions will be on curriculum. The curriculum implementation group will probably turn into something like the curriculum maintenance or development group, it will keep going. It's got its own momentum actually, we had to give it a little push to begin with but now it's off and rocking and people are now starting to want to present and want to do things, they are self motivated.

So we have been fortunate up to now, so if we can keep the curriculum group going and the HODs focusing on curriculum, then it will self sustain.

Clearly, by allowing teachers to meet and discuss the revised curriculum document, the senior leaders in school A believed this had created a self-sustaining model of change. They also believed that this model did not have to be restricted to in-house meetings between teachers but also included meeting colleagues from other schools.

Cluster groups and subject associations

Both the senior leaders in schools A and B commented on their use of subject associations and cluster group meetings. Their opinion was summarised in these comments:

1A: I think in terms of a model that works, I think the Principals' cluster meetings, professional learning communities are excellent, and are certainly generating resources and conversations around leadership and learning.

1B: IGCE set up 3 days sessions which are outstanding workshop based, basically 10 essays, mark them. A number of different schools are there. You get a real feel for it. Out of this IGCE have developed these clusters which are outstanding, top dollar. That would be the finest professional development.

These comments suggest that both the senior leaders in schools A and B believed that professional development opportunities which allowed school leaders and teachers to meet, discuss and share ideas with teachers and facilitators from other schools or organisations was effective professional development that led to sustained shifts in thinking.

A combination of approaches

The teachers in school A explained the value of a variety of professional development approaches. They explained:

1A: We have deliberately done a whole buffet approach, rather than just the Monday afternoon professional development with a guest speaker. We use a whole variety of things.

2A: I think a variety of approaches is most effective.

This opinion was also supported by the variety of responses to this question from all of the senior leaders, which highlights that they do not believe that only one professional development approach alone is effective at causing sustained change in teachers' beliefs, knowledge, skills and teaching practice.

One day courses

Finally, there was clear agreement between the senior leader in school A and C regarding which approach to professional development they believe to be least effective. They stated:

1A: I think the one off key note speech is the least effective.

1C: You have got your one day courses, people go off, they get enthused, they have had a great day out and a great lunch and they might try stuff but then they get bogged down by all the other stuff that goes on. So that change is short lived.

Overall, the responses to the questions regarding how successful have these professional development approaches been in sustaining changes in teachers' beliefs, knowledge, skills and practice show both agreement and individually held beliefs contextual to a particular school. Consequently, this implies that one professional development approach cannot be promoted as the only way of supporting sustained change in teachers' practice.

SUBJECT LEADERS FOCUS GROUP FINDINGS

Introduction

As I have explained in the previous chapter, a focus group discussion was carried out in each of the three schools following a similar focus group schedule (see Appendix Three). The purpose of the focus group was to collect the opinions of the subject leaders in each school, as I believed that they would have a unique perspective of the curriculum implementation process as they are in charge of managing the required changes at a subject or faculty level.

I have used the focus group questions to structure the findings and then grouped the subject leaders' comments using themes evident in the participants' responses and

which appear in the findings below as sub-headings. Participants in the focus group at school A are labelled in the findings 3A – 9A, in school B they are labelled 2B to 5B and in school C they are labelled 2C to 5C.

Ways that the New Zealand Curriculum has challenged teachers to change their beliefs, knowledge, skills and teaching practices

Similar to the senior leader interviews, questions linked to teachers and change in relation to the revised curriculum, elicited a wide variety of responses from the subject leaders both within the same school and between different schools. Their comments could be grouped into the three evident themes of, limited change due to integration with current practice, major changes, and the level of change is dependent upon the individual.

Limited subject area change due to integration with current practice

Five subject leaders within each school expressed the opinion that the introduction of the revised New Zealand Curriculum had not challenged teachers in their subject areas to change their beliefs, knowledge, skills or practice in significant ways, because how they had been previously operating already reflected the principles, values and pedagogy of the new curriculum document. Therefore, implementation of the curriculum did not involve change but more integration of what they were doing with the format and language of the revised document. The five subject leaders from across the three schools explained how this worked in their subject areas:

5A: In Social Science we didn't need a lot of professional development for that, because a lot of that stuff we were already doing anyway, it was just a matter of refining a number of those things.

10A: No. They didn't have to make any change to their practice. Simply, some things that were implicit in music before we suddenly realised ah you know this is actually assessable because we looked at all the criteria.

2B: Integrating the new values and the new competencies, not implementing them, but aligning them to the Special Character competencies and values of our faculty was one of them.

2C: For us it was a bit different cause we took on the numeracy project a couple of years before the new curriculum, so a lot of the changes, the pedagogy of the new curriculum was brought through already.

3C: For us in Art there weren't so many changes. I heard that Art was in the previous curriculum change the last to be done so this time round there weren't so many changes.

Consequently, for the reasons expressed above, a number of subject areas and subject leaders within each of the three schools found that the changes were limited and not particularly challenging. However, this was not the case for all subject leaders, as one or two of the focus group participants in each school felt that the revised New Zealand Curriculum had challenged their subject areas to make major changes.

Major subject area change

There were five subject leaders that felt the implementation of the revised curriculum had challenged them and their staff to make major changes to their practice. The following quotes display the reasons for this high level of change:

3A: Hell of a lot of work because our curriculum has changed whole heartedly, nothing is the same.

5A: A realignment of attitude I think for a number of staff in our faculty and that's a slow process. It's still evolving at the moment.

5B: It's changing a mind-set which is probably the biggest difficulty. It's always difficult change for people, particularly with the older staff it is hard.

2C: But the biggest changes were for the more experienced teachers, cause you have got to think about those kids who aren't good at maths, so you have

got to use different materials. So that is the biggest barrier to change still today.

4C: The biggest change for us was the key competencies stuff and trying to implement the key competencies whereas before there wasn't that it was all content driven. I think implementing the key competencies is a whole new way of thinking and I think about 10 % of our staff got it mentally let alone teaching it.

The variety of response shows that the challenge to change was caused by a number of different reasons. For some staff it was a dramatic change in content and practice, whilst for others the challenge was more to do with shifts in thinking or teaching style. This suggests that the level of change experienced by subject leaders and subject areas was subjective and perceived differently by different people.

Dependent on the individual

The idea that the introduction of the revised New Zealand Curriculum challenged individuals in different ways and to varying degrees is a theme that is prevalent throughout the data from all of the three methods of data collection. The variety of subject leaders' responses implicitly suggests that challenge to change has been a different experience for different individuals and this perception was expressed explicitly by one of the subject leaders in school B:

5B: Change was different for different people. At faculty level there was some that had to change more than others.

In summary, subject leaders offered a wide variety of responses to the focus group questions that explored how the introduction of the revised New Zealand Curriculum had challenged them and their staff to change their beliefs, knowledge, skills and practices. It was clear from what they said that the level of change experienced and the reasons for this change were not the same between faculties within the same school, or between faculties in different schools. In the next section I will explore

some of the professional development approaches that subject leaders used to support the implementation of the revised curriculum.

The professional development approaches used by subject leaders to support teachers to make sustained changes when implementing the New Zealand Curriculum

In each focus group the question aimed to discover what kinds of approaches subject leaders had used in order to support their staff with the implementation of the revised curriculum. The responses could be thematically grouped into four topics: in subject area professional development; external subject area professional development; subject specific cluster groups and sharing with colleagues; and in subject area coaching and mentoring.

In subject area professional development

In all of the schools all of the subject leaders had organised subject specific professional development in order to introduce the revised New Zealand Curriculum. The comments suggest that much of this work was based on creating unit plans and resources that reflected the principles and aims of the new document. The format of these faculty professional development sessions differed, with some involving subject leaders carrying out presentations and others using group discussions or teaching staff producing resources together. Five subject leaders from across all of the schools explained their approach:

5A: Exemplars being presented in department meetings where we would have a staff member who would show us what they had done and we would work with it.

10A: We had a lot of department meetings where we thrashed things out, we came up with some approaches and worked through that to get a sort of template for a unit which covered everything that needed to be covered.

5B: Every alternate Weds morning we have faculty professional development from 8.00 to 8.50 which the second half of last year and the first half of this year was focused on the new curriculum.

2C: As numeracy coordinator I would go on professional development and then I would come back and run workshops in the faculty on how to implement new strategies with the kids and how to get certain things across to them and how to use new materials and things like that.

4C: We have done new curriculum workshops in departments.

Like the senior school leaders, the subject leaders did not only rely on their own knowledge or that of the staff in their faculties to introduce the revised New Zealand Curriculum. They also used external facilitator run professional development.

External subject area professional development

All of the subject leaders had drawn on external facilitators in some way in order to support their own introduction of the revised curriculum principles and pedagogy. As the comments show below, the way that they used this external support was different, with some subject leaders opting to send their staff on courses whilst others booked in facilitators to run departmental workshops or to coach individual members of staff:

7A: We don't have big dept ones, we book in the advisor to work with individuals in the faculty to do with them whatever needs to be done.

4B: So there are our own staff leading professional development with the whole staff and then we have had staff also go to outside providers together with other faculty members.

3C: Last year we had the arts advisor come down and do a workshop with us. She had been travelling around the country, so she brought everything she had picked up.

These comments show that subject leaders chose to use external facilitators in a variety of different ways to meet the individual needs of their subject areas and

teachers. However, the idea of having the opportunity to share ideas and knowledge with colleagues was a common theme that was displayed in seven subject leaders' comments.

Subject specific cluster groups and sharing with colleagues

Seven subject leaders in schools B and C had made use of opportunities to share ideas with colleagues, both in formal association and cluster groups, or through file sharing on-line. Comments from three subject leaders reflect this opinion:

4B: We are in an ICT cluster with a faculty in another local college. It is a three year contract with the ministry.

3C: You know we have been networking and sharing resources from other schools.

5C: So we had South Auckland clusters basically. We hosted Science and Maths and we all met up in different schools around. So we got together and we shared what we had done so far and we discussed how we were going.

The participants' answers show that the cluster group approach was used both by different subject areas in the same school and by different schools.

In subject area coaching and mentoring

A final approach to professional development that was used by a limited numbers of subject leaders was coaching and mentoring. Although most of the interviewees were involved in the coaching of provisionally registered teachers, few had used this to explicitly implement the revised curriculum. However, two subject leaders in school B did make use of coaching and mentoring in limited ways:

2B: The systems administrator also works alongside staff in our subject quite closely to help them set up data projectors, slide shows and things like that, and that changes peoples' way of doing thing.

4B: As HOFs that is part of our role, to spend time coaching our staff. We use other staff in the department as examples, getting them to come in to show staff, buddying them up.

Overall, all of the subject leaders in the three schools had implemented some kind of professional development to support the introduction of the revised New Zealand Curriculum. In the next section I will present the findings regarding which of these approaches were deemed to be most successful and how was this evaluation carried out.

Successful professional development approaches that led to sustained changes in teachers' practice and how shifts in practice were measured

Like the senior leader interviews this was split into two key areas. Firstly, how subject leaders evaluate if the professional development that they have organised in their subject areas has been effective at shifting teachers' practice. Secondly, which of these professional development approaches have been most effective at creating sustained change in teachers' practice.

Methods used to evaluate within subject areas shifts in teachers' practice

The subject leaders did not perceive a need to evaluate the implementation of the revised New Zealand Curriculum explicitly as they felt it was all part of teaching and learning. Although they did suggest that at particular times they might focus their evaluations on the implementation of one element of the revised curriculum, such as the key competencies. In terms of teaching and learning the subject leaders all used similar approaches to evaluate change in teachers' practice. These were, appraisal carried out by HOFs, lesson observations, and teacher self evaluation. A selection of participants' comments reflect the approaches used by all those that spoke in the three focus groups:

2C: We use appraisal and observing them.

2B: At a faculty level, it was us as HOFs who evaluate if things like the key competencies are happening in classes.

3B: So we use mainly faculty observations and self evaluation too.

These comments show that subject leaders had used a variety of strategies to evaluate the teaching and learning provided by the teachers in their departments or faculties. These evaluations that were focused on teaching staff were also supported with evidence collected from the students.

Methods used in subject areas to evaluate shifts in students' learning and achievement

Subject leaders in all three schools agreed about the value of using student data in order to evaluate shifts in teachers' practice and the effect that this was having upon student achievement. Different schools and different subject areas within schools used various kinds of student data, which could be summarised into the three categories of: student assessment data; student feedback and student attendance; and engagement in lessons. The subject leaders explained:

6A: Student voice, they are using student voice, at the end of each week they fill out a form in the back of their book and at the end of a unit we ask them to do a review.

6A: We are finding students much more engaged in the task, there is a lot less off task behaviour. So you know the classes are much more settled.

4B: We use student evaluation as well. We do one a term. The first one is given straight back to the teacher and the other ones are shared with a faculty member, which could be the HOF.

3C: Results analysis, we compare this year to last year, different class with the same course.

4C: We use numbers in classes as a measure of engagement.

The variety of responses above suggests that there is not one preferred method of evaluating change in teachers' beliefs, knowledge, skills and practice, however the subject leaders felt that together these approaches provided good feedback regarding sustained changes teachers were making and the effects that this was having on student learning and achievement. The next section will present the findings regarding which approaches to professional development subject leaders believed best supported teachers to make changes to their beliefs, knowledge, skills and practices.

The success of professional development approaches at sustaining changes to teachers' beliefs, knowledge, skills and practice

Subject leaders offered a range of professional development approaches that they felt encouraged sustained change to teachers' practice. The variety of opinions suggests that there is no single simple solution and that a range of approaches could be used either independently or together. The professional development approaches that subject leaders recommended were: subject conferences; in subject area professional development; external subject area professional development; coaching and mentoring in subject areas; structural changes; cluster groups and subject associations; and a combination of approaches.

Subject conferences

Two subject leaders in each school expressed high regard for subject conferences and the following comment from a subject leader in school B, summarises their feelings:

3B: We prefer to do things over 2 – 3 days the more subject conference type activity or on-going professional development rather than the one off four hundred dollar a day course, which we firstly don't find very useful and secondly not value for money.

Once again these comments reflect a common theme in all of the data that participants felt professional development which offered extended time to work on a topic in-depth was the most effective.

In subject area professional development

Every subject leader in every school had ongoing professional development within subject areas. As this is organised by the subject leaders themselves they all felt that it was relevant and effective at moving teachers. A comment from a subject leader in school A sums up the subject leaders' belief in the effectiveness of in subject area professional development:

5A: It's been really good. It's been good bonding for the department I think too. We have planned in pairs, groups and alone out different times. We would brainstorm as a dept and then pairs would go away and work on it and then they would come back to the groups and talk about it and refine it.

However, as was seen in previous section, there has also been an emphasis on external facilitators being brought in to work with teachers in subject areas, which subject leaders in each school also believed was effective.

External subject area professional development

The external professional development that subject leaders perceived to create sustained changes in teachers' practice involved both staff attending workshops and facilitators or subject advisors being brought in to a school to work with teachers in a particular subject area. Three comments reflected the subject leaders' feelings:

6A: We have used the advisor quite a bit because I know that they go to many schools and so they have a wider perspective.

2C: It would be people coming into the school. Because hearing it from someone outside is the best thing for them.

3C: For me the most effective professional development has been the jumbo days. Lots of workshops, sharing of resources, nutting out of units and looking at exemplars.

These comments show that both in the same school and between schools the approach of 'buying in' specialist facilitators was popular and deemed to be successful professional development.

Coaching and mentoring in subject areas

Coaching was offered by only a small number of subject leaders as an effective method of changing teachers. Two subject leaders offered comments about coaching:

2B: The systems administrator also works alongside staff quite closely to help them set up data projectors, slide shows and things like that, and that changes people's way of doing things.

4C: Shadow coaching as part of the Te Kotahitanga Project. Having a very good shadow coach helped I had xxxxx. It was only once a term, but she said the right thing to open up my mind, you know to try new things, rather than just trying to tick the Te Kotahitanga box for the observation. It's cheesy but she was showing you the door.

The comments from these two subject leaders show that they had experienced or used coaching successfully to shift teachers thinking and practice as part of an ongoing professional development initiative such as the Te Kotahitanga project and they were passionate about the transformative possibilities of this approach to change.

Cluster groups and subject associations

A final approach to professional development that was highlighted by many of the subject leaders in all three schools as being an effective change agent was cluster

groups and associations. The comments below show subject leaders enthusiasm for these kinds of opportunities:

7A: Our subject associations are very good and I also paired up with a HOD from another school.

2B: That is also what the involvement in the e-learning cluster with the local college is doing, it's just moving people.

3C: Sharing with other people is best. You know creating all the resources for a new programme is daunting but if you can share it then you can take the pressure off.

These comments show that the benefits of these communal forms of professional development were associated with the ability to share ideas and resources with like-minded and experienced professionals.

A combination of approaches

The variety of perspectives offered by subject leaders on approaches to professional development that cause sustained change in teachers' practice, suggests that there is no single best approach. This opinion was expressed explicitly by a subject leader in school B, they explained:

2B: I don't think you can do a blanket professional development because people within the faculty will have different needs.

Consequently, the subject leaders all offered a range of different professional development approaches that supported their subject teachers to implement the revised New Zealand Curriculum and to continuously reflect on and develop their beliefs, knowledge, skills and practice.

FINDINGS CONCLUSION

In terms of how the introduction of the revised New Zealand Curriculum has challenged teachers to change, the findings present a diverse set of perspectives.

What the teacher questionnaire and the senior and subject leaders' comments do all agree upon is that there has been some change required to implement the revised document. However, the level of the change required and whether the change has been in the area of subject content, beliefs, pedagogy or teaching strategies has been different for each of the schools, the subject areas within each school and the individual teachers within each subject area. These contrasting factors display the complexity of change initiatives and the many different factors with which change leaders must engage.

In terms of professional development approaches that have been used by schools to support the implementation of the revised New Zealand Curriculum and which of these have led to sustained changes, again the findings show a wide variety of beliefs. All the senior leaders and subject leaders have provided their staff with some professional development to support the curriculum implementation process. However, the depth, amount and format of this development have been different in each of the schools and within different faculties in each school. Even though it has been provided, several teachers in each school indicated that they had not received any professional development support. Senior leaders and subject leaders use a range of approaches to evaluate teaching and learning, although none of them have explicitly evaluated changes in teachers' practice or student achievement caused by the implementation of the revised curriculum. All three groups of participants offered a wide variety of professional development approaches that they believe have led to sustained change in teachers practice, suggesting that a variety of approaches could be effective.

The next chapter will explore in more detail these conclusions drawn from the findings presented in chapter four and examine the links between the literature presented in chapter two and the findings of all three data collection methods.

CHAPTER FIVE: DISCUSSION OF THE FINDINGS

INTRODUCTION

The purpose of this chapter is to discuss the findings presented in chapter four, in relation to the literature introduced in chapter two. The research objectives and questions form the framework for this discussion. The overall objective of this research was to investigate professional development approaches used by secondary schools in order to facilitate sustained change in teachers' practice, when implementing the revised New Zealand Curriculum.

From the data that has been collected and presented in chapter four, six key themes have emerged, these are: fidelity of curriculum implementation influences on the demand for change; differing experiences and perceptions of change; complexity and leadership of change; the professional development approaches that have been used to support sustained change in teachers' practice when implementing the revised New Zealand Curriculum; evaluation of curriculum implementation and professional development support; and approaches to professional development that lead to sustained change. These themes provide the headings in this chapter, in which is explored the relationship between the research questions, the three sets of data collected for this study and the established literature base.

FIDELITY OF CURRICULUM IMPLEMENTATION INFLUENCES ON THE DEMAND FOR CHANGE

The responses of the senior leaders that participated in the interviews showed that how SMTs have designed and planned their own school-based curriculums, in response to the implementation of the revised New Zealand Curriculum, has influenced the level of change demanded of teachers working in the three schools. The Ministry of Education has presented the curriculum document as only a framework, it explains on page 37 of the curriculum that it "is a framework rather than a detailed plan. This means that while every school curriculum must be clearly aligned with the intent of this document, schools have considerable flexibility when

determining the detail” (Ministry of Education, 2007, p. 37). Consequently, this has led to SMTs in the three schools that I studied implementing the document in different ways and different levels of fidelity with the curriculum writers’ intentions being achieved.

The diverse implementation approaches of the three participating schools and the effect this has had on the level of change demanded from teachers is evident in the findings of all three data collection methods. Comments made in the senior leader interviews show that the way SMTs planned the implementation of the curriculum in their school was particularly different in School B compared to schools A and C. The senior leader in school B suggested that due to reasons of school assessment objectives and the assessed curriculum represented by IGCSE and NCEA then they opted for a low key approach to the implementation of the revised curriculum that was focused primarily on their intermediate school. This contrasts with the approach of the leaders in schools A and C whose comments suggest that they embraced the principles and pedagogy of the revised curriculum more whole heartedly. These differing approaches to the curriculum implementation had a knock on effect to the teachers’ experience of change, which was highlighted in the findings of the teacher questionnaire.

By reviewing the questionnaire results in light of the senior leaders’ comments regarding their implementation approach, there is a connection between the level of change experienced by teachers in their schools and the approach to implementation that SMTs chose to take. Thus, it can be seen in school B, whose leader’s comments in the interview suggested that teachers were allowed an optional approach to the implementation, that 57% of the teaching staff who returned the questionnaire in this school reported having not changed anything at all in response to the implementation. This number of teachers was much higher than in school A, of which only 6% felt that they had not changed anything. Furthermore, the SMTs implementation approach also appeared to influence the professional development support that teachers experienced. The questionnaire results showed that ten teachers in school B believed that they had not received any professional

development support to aid their implementation of the revised curriculum, compared to only one teacher who felt the same way in schools A and C combined.

The effect of senior leaders' implementation approach on the demand for change was also highlighted in the focus groups findings. Once again, subject leaders working in school B commented on how little they felt a pressure to change their practice, whilst seven subject leaders in schools A and C expressed that their subject area planning and the practice of their teachers had changed completely due to the implementation of the revised New Zealand Curriculum. However, as I will explain in the next section, the findings show that the differing demands to change between subject areas was not only due to the implementation approach of senior leaders, but also a range of other factors including teachers' experience and teaching style.

Overall, what the findings of this study show is that the level of fidelity achieved between the revised curriculum document and the curriculum that is implemented in schools is largely dependent on the planning and subsequent actions of the teachers and school leaders. Once a new curriculum has been created and established by a government organisation it is then left to SMTs and ultimately the teachers within a school, to turn the government produced document into a daily functioning reality (Harris, 1977). This places much of the power regarding the approach to implementation, and how faithful to a document a school chooses to be, in the hands of school leaders and ultimately teachers. These are results that are also echoed by Shkedi (2009), who suggested that within the realm of fidelity of implementation and how strictly the intentions of a curriculum document are adhered to and followed in the classroom then teachers have almost total power. Shkedi (2009) states that:

The formal curriculum is the curriculum as written by the professional curriculum writer; the perceived curriculum is the curriculum as perceived by a teacher; and the curriculum-in-use is what a teacher reports actually happened in the classroom. In general, studies have found no congruence

between the formal and the perceived curriculum and the curriculum-in-use. When a new curriculum is introduced, teachers construct their own curriculum narrative by identifying familiar elements in that new curriculum. (p. 837)

Consequently, what the findings of this study and the work of Harris (1977) and Shkedi (2009) suggest is that school leaders and teachers' interpretations of the revised New Zealand Curriculum have been different in different schools, due to the interplay between individuals, the school curriculum, the school culture and the assessed curriculum represented by IGCSE and NCEA. Therefore, teachers' experience of implementing the revised document and the demands for change to their practice has also been subjective, which in turn has led to students receiving varied interpretations of the revised curriculum and divergent learning experiences. Although, as I will explore later in this section, due to a lack of evaluative work currently being done regarding the implementation of the revised New Zealand Curriculum, schools and the Ministry of Education in New Zealand do not yet know what effects the revised curriculum has had on students' learning and achievement.

As I have explained previously, the variance in implementation approach and fidelity to the curriculum documents' intentions are not the only factors that have influenced the demand to change for individual teachers. In the next section I will discuss these other change influences.

DIFFERENT EXPERIENCES AND PERCEPTIONS OF CHANGE

The findings of the questionnaire, in the study reported in this thesis, displayed a wide variety of opinions regarding whether teachers believed that the implementation of the revised New Zealand Curriculum had challenged them to change. 34% of teachers felt that it had not challenged them to change anything, although as was explained in the previous chapter teachers' comments suggested that this was for a number of different reasons. These included: new teachers having not known any other curriculum; some teachers feeling that the revised curriculum reflected the way that they already taught; and others not changing because they did not believe the principles of the revised document would lead to raised achievement for students. In

contrast, 34% of the teachers indicated that the implementation had challenged them to change the strategies that they used to teach, and 26% felt that it had challenged them to change the content of what they teach. This diversity of response to how teachers felt challenged by the implementation of the revised document was also reflected in their comments, one teacher from school A wrote that, "*It has widened my horizons on the goals of our society related to what and how I teach*", whilst in contrast another teacher in school B stated "*I still use the same strategies of inquiry that I have always used*". Consequently, it is clear from the findings of the questionnaire that there was a wide range of opinions regarding how the implementation had challenged teachers to change and there was also a wide range of reasons why teachers had been challenged in different ways. These findings from the teachers' questionnaire were also reflected in the findings of the senior leader interviews and the subject leader focus groups.

Comments made by senior leaders supported the findings from the questionnaire that I have presented above. Both the senior leaders in schools A and C alluded to contrasts in the way that teachers had been challenged by the curriculum implementation. They felt that in each school there were groups of teachers whose teaching already reflected the intentions of the revised document, there were teachers who were willing to adapt their practice in order to meet the intentions of the document and also teachers that did not want to change or found the level of change required to be a major challenge.

The senior leaders' opinions were also supported by the responses of subject leaders expressed in the focus groups. The subject leaders' responses across all three schools displayed a wide variety of opinions with regards to the level of change that the implementation of the revised New Zealand Curriculum had required. The variety of responses from the subject leaders confirmed the findings of the teacher questionnaire and the senior leader interviews, that teachers were challenged in many different ways and to different levels by the implementation of the revised curriculum. What is evident in the subject leaders' comments is that some of this contrast in challenge was created by the differences in content and approach to the

implementation of the curriculum within different subject areas. Some subject leaders felt that the move from the previous curriculum framework was not a huge shift in thinking, whilst others believed that the revised document in their subject area had demanded a whole hearted shift in content and thinking. It is significant to note that two of the most juxtaposed comments provided in the focus group carried out at school A were offered by subject leaders participating in the focus group with colleagues from the same school. This suggests that the contrast in change experience might have been caused by differences in the content of the curriculum between different subject areas and also differences in subject leaders' previous experiences and practice.

The idea that individuals can react differently to a change initiative and some of the reasons for this divergence is also explored in the literature. Chonko (2004) explains that an individual's perception of an organisation in its current form and their perception of the organisation's readiness for change may be different for each staff member. One staff member may view established organisational practice as dated and in need of change, another individual at the same organisation may perceive the established routines to be leading to high student achievement and in no need of revision. The literature suggests that this variety of response to change is produced due to individuals' reactions being created by their beliefs and assumptions, and thus is a subjective entity which could be expressed differently by different people (Fullan, 2003; Schein, 2004). Furthermore, Kavanagh and Ashkanasy (2006) suggest that a person's acceptance of a change to an organisation's culture "hinges on an individual's perception about the manner in which the process is handled and the direction in which the culture is carried" (p. 81). Finally, Vahasantanen and Etelapelto (2009) and Hall and Hord (1987) believe that for some staff members educational reforms can be challenging as they require a development of an individual's professional identity, which has been formed through their experiences, values and beliefs.

Overall, the findings from all three methods of data collection and the literature outlined above reveal that teachers' beliefs, knowledge, skills and teaching practices

can be challenged in a wide variety of ways by the implementation of a new initiative, such as the revised New Zealand Curriculum. The results from this study and the literature (Fullan, 2003; Vahasantanen & Etelapelto, 2009) also offer a number of reasons for individuals to differ in their experience of the same change initiative. These reasons include: leaders implementing the initiative differently in different schools and thus different levels of change being demanded of teachers; the documentation and implementation requirements of an initiative being different in different subject areas; the congruence between a teachers current professional identity and the demands of a new initiative; an individuals' perception of change and the way that the implementation has been handled; and finally an individuals' perception of the current state of an organisation and how ready they believe it is to change.

COMPLEXITY AND LEADERSHIP OF CHANGE

The view that change initiatives are complex and therefore challenge the leaders of change was evident in the findings of this study. As was explained above, in response to question one of the questionnaire there was a wide variety of comments regarding how teachers felt challenged by the implementation of the revised curriculum. This complex variance was also evident in all other aspects of the questionnaire. In response to the professional development questions, teachers expressed preference for internet, printed resources, workshops and coaching. Furthermore, this range of often conflicting and thus complex responses was also expressed in the answers to the more open questions, with some teachers criticising the implementation and corresponding professional development, whilst others praised the initiative.

The varied and conflicting comments evident in the findings of the teacher questionnaire show that a change process can be particularly complex for leaders as they must consider a wide range of opinions and issues. Some of the issues leaders must consider are: communicating the vision of the change process; considering the current culture of the organisation; building a bridge between the new incoming ideas and the current culture; purchasing the resources required; and managing the

different people and perceptions involved in the change (Bolman & Deal, 2008; Hall & Hord, 1987).

These ideas expressed in the literature were also expressed by the senior leaders in this study. In the interviews the senior leaders explained how amongst their staff there were a range of responses to the curriculum implementation, including “*high flyers*” and those that were “*struggling*”. Furthermore, in the interviews they also expressed a wide range of processes and activities that they had needed to establish in order to lead the revised curriculum implementation. The variance in teachers’ attitude and experience, coupled with the need to organise a range of implementation activities, displayed the high level of complexity with which the senior leaders have had to deal as they planned and travelled their school’s implementation journey.

The findings from the senior leader interviews and the teacher questionnaire show that in order to implement a large scale change initiative, such as the implementation of a new curriculum, then school leaders are faced with a multi-faceted and complex task that involves them skilfully managing a wide range of activities and leading a number of different people who may have very different opinions. This viewpoint was also expressed in the literature. Scott (1999) explains that leading “the change process is complex because so many factors may be simultaneously interacting and each change situation is shaped by a unique mix of external, system and local factors” (p. 8). Changing the practice of an organisation is a challenging and complex process, however if it is done effectively it can lead to benefits and improvements in practice for all those concerned (Cardno, 2006; Bolman & Deal, 2008; Fullan, 2003). Complexity is particularly evident in change processes implemented in schools because they tend to involve a number of different staff. In larger schools, being responsible for implementing change initiatives, such as a new curriculum, may involve leading one hundred teachers who are all required to change their practice in some way. For school leaders this suggests that change processes are challenging and complex, as the number of different perceptions regarding the change could amount to the total number of people working within the organisation (Chonko, 2004; Kavannagh & Ashkanasy, 2006).

The literature also suggests that how a leader plans and carries out this challenging role will have a significant impact on the success or failure of the initiative (Dimmock & Walker, 2002; Scott, 1999). If they lead the change effectively, by perceiving the problem through multiple lenses and developing their solutions into shared assumptions, then the change will become sustained. However, if when faced by a problem a leader mismanages the process, it can cause staff to feel alienated and become resistant to the change, causing the initiative to not be fully implemented, or even fail (Bolman & Deal, 2008; Cardno, 2006; Scott, 1999).

In the next section I will discuss some of the findings regarding professional development that the school leaders used in order to help support the implementation of a change initiative.

PROFESSIONAL DEVELOPMENT APPROACHES USED BY SMTs TO SUPPORT IMPLEMENTATION OF THE REVISED NEW ZEALAND CURRICULUM

The findings of this study show that in the three participating schools workshops stood out to be the most used form of professional development in order to support the implementation of the revised New Zealand Curriculum. All three senior leaders expressed that they had focused much of the professional development support into faculty specific workshops or meetings. This approach was also confirmed by the findings of the subject leader focus groups which showed that in all three schools subject specific meetings and professional development formed the core of faculty based support for the implementation of the revised curriculum.

The popularity of workshops was also displayed by the results of the teachers' questionnaire, which showed that 55% of the teachers indicated that workshop activities were the professional development approach that the highest number of them had experienced.

However, workshops were not the only form of popular professional development used to support teachers in implementing the revised curriculum. The questionnaire findings showed that a wide variety of professional development approaches were made available and used by teachers in order to support their understanding of the revised document. Furthermore, responses from 50% of the teachers showed that many individual teachers had experienced a combination of approaches, with printed resources, websites and workshops being the most popular mix.

The findings from the questionnaire were also supported by the senior leaders who had put into practise a number of different professional development approaches in order to support the implementation of the revised curriculum document. When interviewing the senior leaders and subject leaders, it was clear that they had purposively opted to use a variety of professional development approaches in order to meet the many different demands of the teaching staff that the curriculum implementation professional development had to support. This strategy was summed up by the senior leader in school A, who stated that: *“we have deliberately done a whole buffet approach”*.

The findings of this study, which suggest that senior leaders need to draw on a range of professional development approaches when supporting the implementation of an initiative, such as a new curriculum, are reflected in the literature by Guskey (2003), he writes:

It seems clear, therefore, that differences in communities of school administrators, teachers and students uniquely affect professional development processes and can strongly influence that characteristics that contribute to professional development’s effectiveness. Because of these powerful contextual influences, broad-brush policies and guide-lines for best practice may never be completely accurate. (p. 16)

In this way, Guskey (2003) confirms what the senior leaders, particularly in schools A and C expressed, which is the need to draw on a ‘buffet’ of professional development in order to suit the contextual needs of their school and the staff

involved. In terms of this study, the contextual influences on professional development activities are another link to the previous section of this findings discussion, which explored the complexity of implementing a new curriculum. What Guskey (2003) highlights above with regards to professional development, is the same issue that Scott (1999) observes with change leadership. They both present the complexity of implementing something new, be it a curriculum or a professional development activity, into a community of people with individual perceptions, beliefs and reactions to change. In this way, similar to the implementation of a new curriculum, professional development that necessitates change to teachers' working practices can profoundly challenge their beliefs. Therefore, opportunities for professional development need to be thought out carefully and accommodate a wide range of individual teachers' needs, styles and attitudes to change.

A further issue evident in the findings of this area of the study was a contrast between teachers indicating a high use of internet and printed resources, whilst senior leaders did not mention this kind of professional development support. However, senior leaders did comment upon structural timetable changes as a form of professional development, which in turn was not mentioned by the teachers. There are two suggestions that might explain the difference between the senior leaders' professional development comments and the responses offered by teachers. Firstly, because the use of printed materials and the internet is a solitary activity, senior leaders might not consider this part of the curriculum professional development of which they are in charge. Secondly, senior leaders might not know how many of their teaching staff are making use of printed resources and web based material as it is not something that teachers may have shared with their senior leaders. Similarly, structural changes to the timetable, such as directing teachers to teach in a certain style on a certain day, may not have been seen by teachers as professional development that supports the implementation of the curriculum. The senior leader in school C explained, "*whether they saw it as part of new curriculum development, they probably would if we did it now, but at the time they didn't understand*".

This suggests that teachers' understanding of implementation support in relation to the revised curriculum is in some cases divergent with the planning and actions of their school leaders. Consequently, I have referred to this issue in one of the recommendations that are included in chapter six of this study.

Overall, the findings show that senior leaders, subject leaders and teachers in this study drew on a wide variety of professional development approaches to support the implementation of the revised New Zealand Curriculum. As is suggested in the literature to be best practice, senior leaders in all three schools were evaluating the contextual conditions of their school and the needs of their teachers and then choosing which approaches to professional development would benefit which teachers at a particular time. However the findings also show that there was some variance between the professional development approaches into which senior leaders placed the most resources and those which teachers used and valued the most. Nevertheless, there was agreement between all three groups of participants that subject based workshops were the most popular form of professional development to support curriculum implementation.

EVALUATION OF CURRICULUM AND SUPPORTING PROFESSIONAL DEVELOPMENT

The findings relating to the subject leaders and the senior leaders showed that none of these participants had explicitly evaluated if their implementation of the revised New Zealand Curriculum had improved teaching and learning in their school. This opinion was summarised by the senior leader in school C who said, "*we haven't measured specifically the change in pedagogy. We have not deliberately gone in and looked at pedagogy shift.*" This viewpoint is also expressed in the literature by Hopmann (2003):

Those reforming a curriculum also hope, of course, that a change of goals, contents, and of the ways and means will enhance teaching in some way. It is no surprise that they know whether or not the new curriculum has had the

impact ascribed to it; in other words, they want an evaluation – or do they? Historically this has not been the case.

Similarly, there is no evidence in the New Zealand literature that the implementing authorities at the Ministry of Education or the Education Review Office have carried out an evaluation of the success or otherwise of the revised New Zealand Curriculum in raising the standards of teaching and learning in New Zealand schools. Although, there is some evidence in the literature from Cowie and Hipkins (2009) of studies that have explored how faithful teachers have been to the principles of the curriculum document throughout the process of implementation.

It was unclear from the data why senior leaders had not chosen to explicitly evaluate if the implementation of the revised New Zealand Curriculum had led to improvements in teaching and learning. Although the timing of this study could be a factor as one senior leader did comment that it was too early to tell if the implementation had affected students' learning.

Nevertheless, even though senior leaders in the participating schools involved in this study had not evaluated explicitly the implementation of the revised curriculum, the findings do show various methods that subject leaders and senior leaders had adopted to evaluate teaching and learning within all three schools. Subsequently, because teaching and learning is the basis of the revised curriculum, then it can be assumed that these evaluative methods do give senior leaders some insight into how the implementation of the revised curriculum is affecting teaching and learning in their schools and how the professional development that they have organised has supported this process.

The findings show that senior leaders had used a wide variety of strategies in order to evaluate teaching, student achievement and professional development in their schools. These strategies included lesson observations, teacher interviews, student interviews, student questionnaires and analysis of achievement data. The basis of

these evaluations had been to focus on the practice of the teachers and the students, the effectiveness of strategies deployed, or the outcome of initiatives in the form of assessment results.

These findings also align with the literature of Hopmann (2003) and Guskey (2000). Hopmann (2003) offers three levels which can be used as the focus for some kind of evaluation. These include “the people involved, the processes engaged in, or the product emerging from these processes” (p.460). Whilst Guskey (2000) suggests that:

Good evaluations are the product of thoughtful planning, the ability to ask good questions, and a basic understanding about how to find valid answers. In many ways they are simply the refinement of everyday thinking. Good evaluations provide information that is sound, meaningful, and sufficiently reliable to use in making thoughtful and responsible decisions. (Guskey, 2000, p. 1).

Both of these statements support the evaluative approaches that the senior leaders interviewed in this study were using, which drew on evidence from people, processes and outcomes in order to aid future planning. Furthermore, the preference of all three senior leaders to use a wide variety of approaches to evaluate the effectiveness of teaching, learning and professional development is also a viewpoint shared by Guskey (2003):

Evidence might include a variety of indicators of student achievement, such as assessment or test results, portfolio evaluations, marks or grades, or scores from standardized examinations. It might also include affective and behavioural indicators, such as students’ attitudes, study habits, homework completion rates or classroom behaviours. School wide indicators such as attendance rates, drop out statistics, reductions in discipline problems, enrolments in advanced classes, memberships in honour societies, and participation in school- related activities might be considered as well. (Guskey, 2003, p. 15)

In summary, even though the participating senior leaders had not yet evaluated the implementation of the revised curriculum explicitly, they had adopted a range of strategies to evaluate teaching, learning and professional development, which is an approach to evaluation that is supported in the literature.

APPROACHES TO PROFESSIONAL DEVELOPMENT THAT LEAD TO SUSTAINED CHANGES

In terms of approaches to professional development that lead to sustained changes in teachers' beliefs, knowledge, skills and practice, the findings of this study show that there was a consensus amongst participants. The findings of the questionnaire showed that the majority of teachers believed that coaching and workshops, particularly organised within subject areas, were the professional development approaches that best support sustained change in practice. Also, comments made in the questionnaire showed that teachers valued workshops, cluster groups or subject meetings that gave them the opportunity to discuss ideas or share resources with colleagues from their subject areas. This viewpoint was also supported by the findings of the subject leader interviews and the senior leader focus groups which showed that all of the school leaders believed that the most effective professional development involved meeting with colleagues and sharing ideas, either using a cluster group, workshop or coaching format.

These opinions shared by the participants of this study are echoed in the literature by the DEECD (2005) who present a range of models that can be used to "help teachers analyse and reflect on the impact of their practice and generate ideas for improvement" (DEECD, 2005, p. 1). The models that they offer are: action research; team examination of student work; study groups; case discussions; peer coaching; and small group lesson study. Although, the format of these models are significantly varied, all of them allow the teacher to be part of a small group or pair, and all of them allow the teacher to take part in reflective development, rather than having facilitator led development done to them (DEECD, 2005). Furthermore, Timperley et al. (2007) believe that there is not one particular method of professional

development that works more effectively than another. However, they did conclude that the approaches to professional development that could be found to impact on student learning all involved some element of workshops plus teacher coaching. Consequently, both the literature and the findings of this study agree that opportunities to engage with colleagues in either a cluster group, workshop or coaching format is the approach to professional development that leads to the most sustained change in teachers beliefs, knowledge, skills and teaching practices.

However, it should be noted that even though this study found workshops and coaching to be the most effective approaches to professional development that this does not count out other formats, such as printed or web resources. A final area of consensus from the literature and all three forms of data collection used in this study is that professional development that causes sustained change to teachers' practice needs to be contextualised and draw on a range of approaches. Throughout the data that I collected from all three participating schools there was a common theme with regards to professional development that one size does not fit all. Therefore, school leaders must consider teachers' needs at a particular point in time and then draw on a range of professional development approaches in order to meet these needs.

In terms of the need for senior leaders to provide professional development that is contextualised and using a range of approaches, there was also further consensus between the literature and the findings of this study. In order for an organisation to sustain a change that has been made, the leaders of the change need to plan a cyclical process that considers: the depth; length; breadth; justice; resourcefulness; and conservation of the initiative (Hall & Hord, 1987; Hargreaves & Fink, 2006). However, if a change process can be managed effectively in this way then Schein (2004) suggests that the new way of doing things will become inducted into the organisation's culture. He states that "when a solution to a problem works repeatedly, it comes to be taken for granted... We come to believe nature really works this way" (p. 31). Thus, if school leaders are able to implement a curriculum in such a way that it becomes accepted into the school culture and taken for granted,

then it will be sustained. Fullan (1993) refers to this deep level of change as 'second order' change: a journey that alters the way that organisations are structured and leads to changes in peoples' fundamental assumptions, practices and relationships. One of the comments provided by the senior leader of school A in this study clearly describes an example of this kind of deep level change process and how this has led to sustained change in the culture of school A:

The curriculum implementation group will probably turn into something like the curriculum maintenance or development group, it will keep going. It's got its own momentum actually, we had to give it a little push to begin with but now it's off and rocking and people are now starting to want to present and want to do things, they are self motivated.

This insight provides a good example of how if senior leaders provide the right professional development at the right time, in order to meet the needs of the teachers which they have considered using a range of evaluation strategies, then the outcome can be a change in practice that becomes embedded into the school culture and sustained by the teaching staff.

The six themes that I have outlined in chapter five present a detailed discussion of the findings presented in this study and thus answers to the research questions. In the final chapter I will summarise the key points evident in these themes and show how they interconnect by presenting them in a diagrammatic format.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

This final chapter will provide an overview of the research study, draw valid overall conclusions, evaluate any shortcomings and make recommendations for further research.

AN OVERVIEW OF THE RESEARCH STUDY

The overall objective of this research project was to investigate professional development approaches used by secondary schools in order to facilitate sustained change in teachers' practice, when implementing the revised New Zealand Curriculum. The study objective was encapsulated in three research questions which have formed the basis for this study:

- 1: How has the introduction of the revised New Zealand Curriculum challenged teachers in New Zealand secondary schools to change their beliefs, knowledge, skills and teaching practices?
- 2: Which professional development approaches have been used by SMTs, in a sample of New Zealand secondary schools, to support sustained change in teachers' practice when implementing the revised New Zealand Curriculum?
- 3: How successful have these development approaches been in sustaining changes in teachers' beliefs, knowledge, skills and practice?

DISCUSSION OF FINDINGS SUMMARY

The findings of this study and the literature (Carson, 2008; Harris, 1977; Hertzog, 1997; McLaughlin & Berman, 1975; Shkedi, 2009; Smith & Southerland, 2007; Verhoeven & Nico, 2002) highlight that fidelity of implementation plays a major role in the way that a new curriculum document is introduced into schools. The findings from all three methods of data collection in this study showed that the implementation approach which a SMT and teachers in their classrooms choose,

might have a significant effect on the change required of teachers involved in a curriculum implementation initiative. This project also suggests that how faithfully a SMT choose to be to a new curriculum document might affect the level of change required by teachers in their school. This view is further supported by the literature of Harris (1977) and Shkedi (2009) who believe that although it is governments that are normally responsible for curriculum implementations, it is actually school SMTs and teachers who decide exactly what is implemented and in which manner. Subsequently, both the findings of this study and the literature suggest that if a government provides a curriculum document that is only a framework, as is the revised New Zealand Curriculum, then the implementation of that document and the education provided in individual schools maybe very different. This freedom for schools to develop their own school based curriculum can allow leaders to develop a curriculum relevant to their student body, however it may also mean that students in different schools receive very different learning experiences even though the senior assessment curriculum, in the form of NCEA or IGCSE, is the same for all students. Furthermore, the findings of this study showed that the assessment environment used in a school had a significant impact on the way that school leaders approached the development of their school based curriculum. The findings of the senior leader interviews highlighted that, particularly for the leaders of school B, success in senior assessment grades was the key driving force of their strategic planning and not the revised curriculum.

The implementation approach that SMTs choose to adopt is not the only factor that influences the level of change required of teachers who are presented with a new curriculum. The findings from all the data collection methods used in this research and the literature (Chonko, 2004; Kavannagh & Ashkanasy, 2006; Scott, 1999) suggest that teachers do not enter into a curriculum implementation process as empty vessels, but with a wealth of previous experience and perceptions. Due to these previous subjective experiences other factors may also have an effect on individual teachers' needs and reaction to change. These factors include: current beliefs and practices; perception of the change initiative; view of the current culture of the school; confidence in the change process; and personal attitude to change. The effect of these factors upon individual teachers' experience of the

implementation of the revised New Zealand Curriculum was clearly displayed in the findings of this study. Often teachers in the same school and even within the same subject area made comments that contradicted what other teachers had said or written. For example, in one school a teacher commented that their previous teaching style complimented the intentions of the revised curriculum document and therefore the implementation required little change, whilst another teacher in the same school stated that the implementation in their subject area had required whole hearted change.

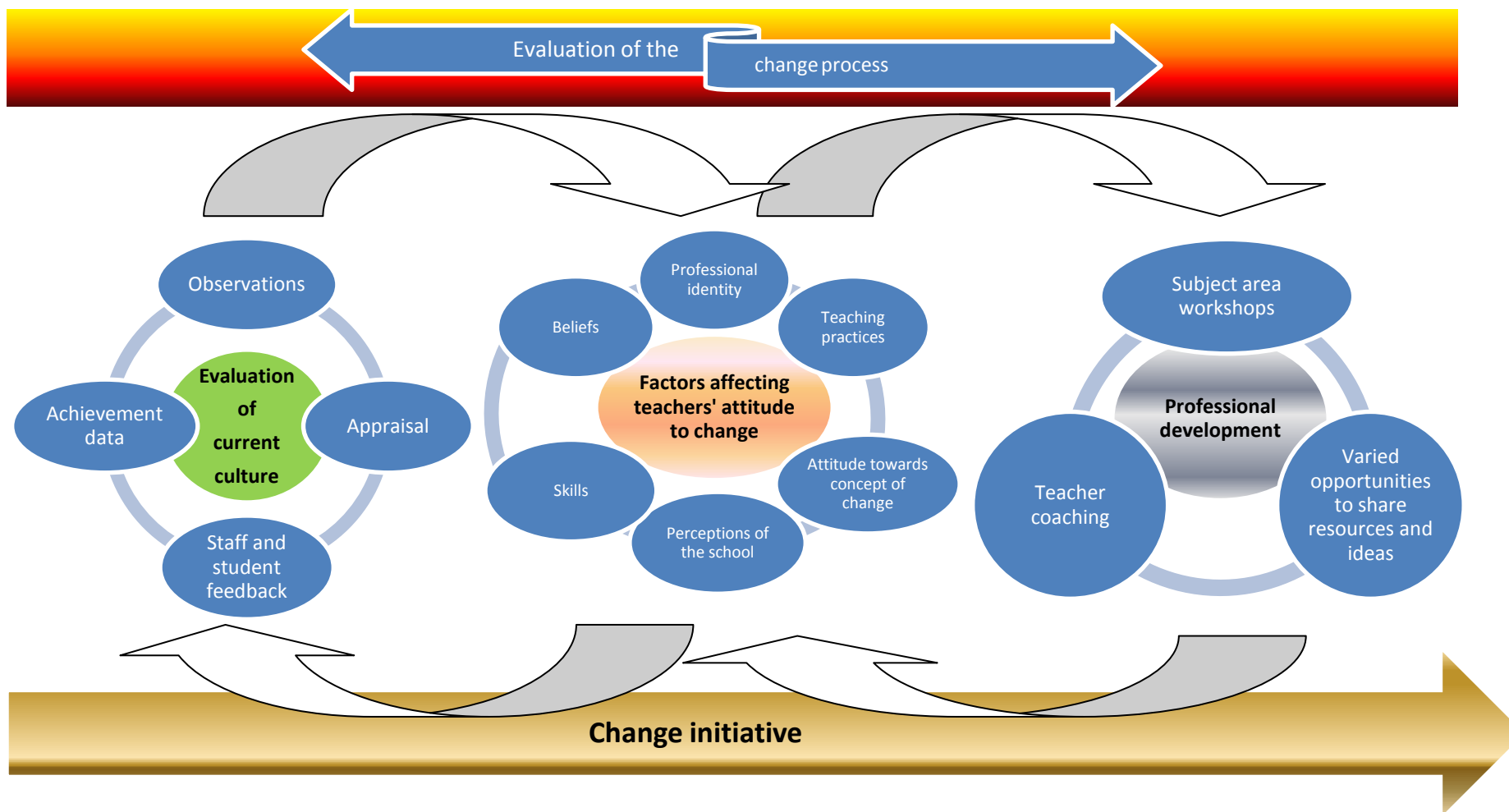
Due to these multiple and varied factors, both the findings of this study and the literature suggest that planning and carrying out change initiatives is complex and challenging for leaders in schools. Leaders must take into account the current culture of the school and the practices and perceptions of a wide range of teaching staff involved (Carson, 2008; Guskey, 2003; Scott, 1999). All three senior leaders participating in this study, and many of the subject leaders, commented upon the complexity of their role as change leader, particularly in relation to dealing with multiple staff members who have very different needs

In order to support the many different needs of teachers involved in school-wide change initiatives, such as the implementation of the revised New Zealand Curriculum, then senior leaders, subject leaders and teachers need to develop professional development approaches that draw on a range of activities and formats (DEECD, 2005; Timperley et al., 2007). Workshops and teacher coach programmes were highly valued by senior leaders, subject leaders and teachers who participated in this study, which is also a view supported by the literature (DEECD, 2005; Timperley et al., 2007). Both the literature and three participant groups of this study suggested that professional development approaches which allow teachers to share ideas and resources with colleagues lead to sustained change in teachers' beliefs, knowledge, skills and practices.

Evaluation showing that the introduction of the revised New Zealand Curriculum has improved outcomes for students has yet to take place. However, the senior leaders participating in this study have shown that they do use a range of strategies to evaluate teaching and learning in their schools. The senior leaders' approach to evaluation is supported by the literature which explains that evaluation of teaching, learning and achievement data can support school leaders to plan effectively and create targeted professional development (Hopmann, 2003). In-depth evaluation should use a range of strategies to gather data regarding people, processes and the achievement outcome (Guskey, 2003).

Diagram 6.1 shown below, visually displays the interconnectedness of the themes presented in the literature and the findings of this study. The diagram highlights the variety of factors that the findings of this study suggest are involved in a change process, such as a new curriculum, when it is implemented in a school.

Figure 6.1: A visual representation of the process of school culture change in relation to the implementation of a new initiative



The arrow at the bottom of the diagram represents the change initiative that is driving the change process. In the case of a curriculum implementation, such as the revised New Zealand Curriculum, this is initiated by a political decision led by a government ministry (Pang, 1999). As the new curriculum begins its implementation journey, represented by this arrow, so responsibility for the initiative is passed to school leaders and ultimately to teachers.

The work of school leaders and teachers is represented in the diagram using three cyclical images that present the key factors which the findings of this research and the literature show are at the core of change in schools. These are 'evaluation of current culture', 'factors affecting teachers' attitude to change' and 'professional development' (Bolman & Deal, 2008). Each of these factors are represented as cycles because the findings of this study show that change implementation is often not a fixed process with a clear start and end point. Furthermore, this cyclical and ongoing approach was suggested by the New Zealand Ministry of Education as best practice for schools when implementing the revised curriculum (Ministry of Education, 2010).

The first of the key factors placed in the centre of the diagram is 'evaluation of current culture'. I have placed this theme first because both the literature (Guskey, 2003; Ministry of Education, 2010) and the findings from the interviews and focus groups suggest that in order to implement a change initiative successfully then initially a thorough evaluation of the current context, staff and culture needs to take place. However, this does not need to be a one off occurrence and could be carried out several times throughout a change process.

In the centre of the diagram I have placed 'factors affecting teachers' attitude to change'. This has been placed at the centre of the diagram because both the literature (Chonko, 2004; Kavannagh & Ashkanasy, 2006) and the findings of this study showed that it is teachers and their reaction to a change initiative, which is at the heart of the success or failure of school culture change. The findings of the

questionnaire in this study and the literature (Chonko, 2004; Kavannagh & Ashkanasy, 2006) showed clearly how teachers are individuals and their perceptions are created by a range of factors. These influencing factors are presented in the diagram as: beliefs; professional identity; teaching practices; attitude towards concept of change; perceptions of the school; and skills. The findings of this study suggested that the success or failure of the implementation of a change initiative was reliant on school leaders being aware of the differences in their teachers' needs and differentiating the support required.

Support for teachers when implementing a change initiative, such as a new curriculum, is provided in schools in the form of professional development. This is represented by the final of the cyclical graphics, which is placed at the centre right of the diagram. Three approaches to professional development were suggested by the literature (DEECD, 2005; Timperley et al., 2007) and the findings of all three data collection methods as being supportive when teachers are changing their practice in the context of a new curriculum. These approaches are presented on the diagram as 'subject area workshops', 'teacher coaching' and 'varied opportunities to share resources and ideas'.

The curved arrows above and below these three key factors show that throughout a change process all the elements presented in the diagram are interconnected and are constantly affecting each other. It was evident from the literature (Fullan, 2003; Hall & Hord, 1987; Scott, 1999) and the findings of the senior leader interviews, that change is often complex and therefore should not be viewed as a linear procedure which is always the same. Subsequently, these arrows represent that evaluation of current culture, teachers' attitudes to change and professional development can all happen at any time in a change journey and often will be repeated in the same form or in different forms over the course of an implementation process.

Finally the two-way arrow at the top of the image represents evaluation of the change process, which the findings show is important if the change is going to

adopted into a school culture and sustained (Hall & Hord, 1987; Hargreaves & Fink, 2006). The double ended nature of this arrow reflects how evaluation of the process may be ongoing and lead to further changes (Guskey, 2000; Hopmann, 2003).

Overall, this diagram displays the complexity of change and the many factors with which a school leader must engage in order to successfully implement a change initiative (Bolman & Deal, 2008; Hall & Hord, 1987; Scott, 1999).

LIMITATIONS OF THE STUDY

The ability of the research project to meet the study objective and to answer the research questions confirms that the methodology and methods outlined in chapter three were a relevant choice for this study. However, the most obvious limitations of this study are the restraints of time and resources and the fact that it only involved one researcher. These factors constrained the study to a limited sample size and limited sample location. With greater resources and time, it is possible that a larger number of schools could have been invited to take part in the study and a greater number of factors that influence change in schools' implementation processes could have been investigated, which may have led to enhanced opportunities for generalisation of the findings.

RECOMMENDATIONS FOR PRACTICE AND FURTHER STUDY

The findings of this study have produced four recommendations which may be of use to those managing change within the education sector in New Zealand. I have outlined these recommendations in this section of the study.

1: The findings of this study showed that there were some discrepancies between the approaches that senior leaders planned for school-wide professional development and the approaches that teachers believed were of most benefit. Therefore, senior leaders should consider working with their teaching staff to evaluate the methods of professional development that teachers find the most useful

in supporting them to make sustained change to their practice. These methods should be acknowledged and integrated with the schools' overall professional development strategic plan in order to gain the maximum benefit from professional development.

2: Both the findings of this study and the literature highlighted that when planning a change initiative, senior leaders might benefit from using a variety of strategies to evaluate the current culture of their school and the professional identities of the staff involved. Evaluation may involve strategies such as achievement data analysis, questionnaires or observations and should focus on the people, processes and outcomes involved. In this way, senior leaders can design change action plans that will acknowledge teachers' beliefs, skills, knowledge and current practices and then use this evidence to adopt processes that allow for differences in teachers' perceptions regarding school culture, the change initiative and the idea of change. The findings and the literature suggest that change initiatives based on in-depth evidence and tailored towards individual teachers' needs are more likely to be successful and lead to sustained change.

3: The findings of this study show that when implementing a change initiative, senior leaders should consider supporting the change with a variety of professional development approaches that take into account teachers' individual needs and the context of the organisation. Strategies may include a combination of: printed material; web based information; conferences; coaching; and workshops. Differentiated professional development opportunities of this nature are more likely to be appreciated by teachers and lead to sustained change in their practice. The findings also suggest that teachers particularly value professional development opportunities which allow them to meet in subject groups, both in their own school and between different schools, so that discussion of ideas can take place and resources can be shared.

4: Both the findings of this study and the literature imply that schools in New Zealand may benefit from the Ministry of Education evaluating if the implementation of the revised New Zealand Curriculum is leading to higher educational standards, or if further changes need to be made. Similarly, senior leaders in New Zealand secondary schools might benefit from evaluating the ongoing implementation of the revised curriculum in their schools and its effect on teaching, learning and student achievement. Current revised curriculum implementation evaluation is focused only on fidelity issues and subsequently schools are unaware if the changes that they have made are leading to raised standards for students.

FINAL CONCLUSION

Overall, the two key themes of difference and complexity draw together all of the findings in this study.

The implementation of the revised New Zealand Curriculum is an ongoing process. Both the literature and the findings of this study have shown that, due to the document being only a guiding framework, it has allowed SMTs to implement the principles and pedagogy in many different ways and to differing levels of fidelity (Ministry of Education, 2007). Subsequently, this study has suggested that a variety of approaches to implementation is one of the key reasons that teachers in New Zealand secondary schools have been challenged to change in different ways and to different levels by the requirements of the revised curriculum. To date, evaluation of the revised curriculum has been focused on schools' fidelity of implementation (Cowie & Hipkins, 2009; ERO, 2009). There has yet to be an evaluation of the effect of the implementation on teaching, learning and achievement in New Zealand secondary schools. Senior leaders participating in this study showed that they have drawn on a wide range of professional development approaches to support teachers as they were challenged to change by the implementation of the revised New Zealand Curriculum.

When implementing a change initiative, such as a new curriculum, school leaders need to consider the present staff and the organisation's current culture. Teachers are individuals and their skills and beliefs may be different, their reaction to a change initiative may be different and their reaction to the idea of change may also be different (Chonko, 2004; Kavannagh & Ashkanasy, 2006). These differences cause complexity for leaders of change (Scott, 1999). However, if school leaders use varied and well planned evaluation strategies, it will provide them with detailed data that will support their decision making when implementing a complex change initiative (Hopmann, 2003).

In terms of supporting teachers to change and to implement a new initiative, the evidence from this study and the preceding literature suggests that school leaders should draw on a range of professional development approaches that support all of the different teachers in their school (DEECD, 2005; Timperley et al., 2007). The findings of this study show that teacher coaching and workshops, which allow teachers to share ideas and resources with colleagues, are the professional development approach that is most effective at supporting sustained changes in teachers' beliefs, knowledge, skills and classroom teaching practices.

The overall message from the findings of this study and the literature is that schools and teachers are all different. Therefore, when leading a change initiative, be it nationally or school-wide, to be successful school leaders must allow for these differences. A blanket, one size fits all approach to change or the professional development that supports it will not lead to sustained change.

School leaders need to plan change processes that allow for the unique context of their school, draw on a range of professional development approaches that suit a variety of teachers, make use of a number of different professional development activities and introduce these approaches at the right time in the school's implementation journey. Get this right and the change initiative will be successfully sustained and adopted into the school's culture. Get it wrong and the initiative may

not be fully implemented or could fail. However, due to the evolving nature of change initiatives in schools and the multiple interrelated factors involved, then a successfully managed change process today could still become a failed opportunity tomorrow. Highlighting the need for school leaders to be engaged in a constant cyclical process of evaluation, implementation and review; this is the complex challenge that leaders of change face.

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APPENDICES

APPENDIX 1



TEACHER QUESTIONNAIRE

Completion of this questionnaire is voluntary. The information that you provide is anonymous and will only be seen by the single researcher involved. Individual schools and teachers will not be identifiable anywhere in the research study and you are not required to provide your name on the questionnaire.

This questionnaire is an opportunity for you to provide information about your experiences in implementing the revised New Zealand Curriculum and the professional development support that you received.

The questionnaire is being carried out as part of a Masters thesis study, being completed by a post graduate student at Unitec, New Zealand. By completing the questionnaire, you are giving your consent to take part in this research project and you are acknowledging that you understand the objectives of the research.

Many thanks for your time.

INSTRUCTIONS

Please complete the questionnaire in the allocated meeting time and return it to me before leaving the room.

Please indicate your response to each question by ticking the appropriate box(es)

1. Has the implementation of the revised New Zealand Curriculum demanded that you change your teaching practices? *(please tick all boxes that apply)*

- No, it has not changed anything
- Yes, it has changed my beliefs about teaching
- Yes, it has changed the content of what I teach
- Yes, it has changed the strategies that I use to teach
- Other *(please specify)*.....

Please add any further comment

.....
.....

2. Have you experienced any kind of professional development activities or resources to support you in the implementation of the revised New Zealand Curriculum? *(please tick all boxes that apply)*

- No, I have not received any professional development
- Yes, internet/web based written resources
- Yes, printed resources
- Yes, workshops
- Yes, coaching or mentoring
- Other *(please specify)*.....

Please add any further comment

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3. Have any of these approaches to professional development supported you to make sustained changes to your practice, when implementing the revised New Zealand Curriculum? *(please tick all boxes that apply)*

- No, none of the professional development supported me to change my practice
- Yes, internet/web based written resources
- Yes, printed resources
- Yes, workshops
- Yes, coaching or mentoring
- Other *(please specify)*.....

Please add any further comment

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4. Which professional development approaches do you believe best support you to make improvements to your practice?

- None
- Internet/web based
- Printed resources
- Workshops
- Coaching or mentoring
- Other (*please specify*).....

Please add any further comment

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5. Is there anything not already covered that you would like to add regarding the implementation of the revised New Zealand Curriculum and sustained change in teachers' practice?

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6. Is there anything not already covered that you would like to add regarding professional development support and implementation of the revised New Zealand Curriculum?

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Thank you very much for your co-operation.

APPENDIX 2



SENIOR LEADERS SEMI-STRUCTURED INTERVIEW SCHEDULE

Interviewer Introduction, thank you and purpose (2 minutes)

Hello. My name is Paul Bennett and I'd like to thank you for taking the time to be part of this research. The focus of this interview is to gain your opinions regarding the professional development that you have provided in response to the implementation of the revised New Zealand Curriculum and how you feel this professional development may have changed teachers' practice.

This interview should take a maximum of 45 minutes.

General question (10 minutes)

- What do you see as the biggest differences between the previous curriculum and the revised New Zealand Curriculum?

Specific questions (30 minutes)

- In order to implement the New Zealand Curriculum what did you have to develop or change in the school curriculum?
- What kinds of changes did teachers have to make in their practice in order to implement the New Zealand Curriculum?
- What type of professional development did you provide to support teachers to change their practice in response to the New Zealand Curriculum?
- How has this professional development supported changes in practice that fulfil the intentions of the New Zealand Curriculum?
- How have you measured that their practice has changed?
- Has this led to improvements in students' learning? What are the improvements and how have you measured them?

Closing (2 minutes)

Thank you for coming today and discussing these issues. Your opinion has given me an excellent insight into professional development and the revised New Zealand Curriculum in relation to your college.

APPENDIX 3



SUBJECT LEADERS FOCUS GROUP SCHEDULE

Moderator Introduction, thank you and purpose (2 minutes)

Hello. My name is Paul Bennett and I'd like to thank you for taking the time to be part of this research. The focus of this discussion is to gain your opinions regarding the professional development that you have experienced in response to the implementation of the revised New Zealand Curriculum and how you feel this professional development may have changed your teachers' practice.

In the discussion today, please respect the privacy of colleagues with whom you work. I would ask you not to use the names of specific staff members nor refer to specific examples from your workplace that may identify individual staff members. My expectation is that you discuss general themes that you have observed rather than specific examples.

I am going to lead the discussion today. My job is to ask you the questions and then encourage and moderate the discussion. It is not my job to try and influence or change your opinion.

Ground rules (2 minutes)

To allow everyone an opportunity to express their opinion, I'd like to go over some ground rules:

- The discussion should take approximately 45 minutes
- Please only one person speaks at a time and avoid side conversations
- Please allow everyone the opportunity to answer each question if they so wish
- Please keep what is discussed confidential, we encourage this so that everyone feels that they can express an opinion freely

General question (10 minutes)

- What do you see as the biggest differences between the previous curriculum and the revised New Zealand Curriculum?

Specific questions (20 minutes)

- In order to implement the New Zealand Curriculum what did you have to develop or change in the school curriculum?
- What kinds of changes did teachers have to make in their practice in order to implement the New Zealand Curriculum?
- What type of professional development did you provide to support teachers to change their practice in response to the New Zealand Curriculum?
- How has this professional development supported changes in practice that fulfil the intentions of the New Zealand Curriculum
- How have you measured that their practice has changed?
- Has this led to improvements in students' learning, what are the improvements and how have you measured this?

Closing (5 minutes)

Thank you all for coming today and discussing these issues. Your opinions have given me an excellent insight into professional development and the revised New Zealand Curriculum in relation to your college.

APPENDIX 4



21st May 2010

ORGANISATION INFORMATION LETTER and CONSENT FORM

Dear Sir/Madam

My name is Paul Bennett. I am Assistant Principal at De La Salle College in Mangere and I am currently enrolled in the Master of Educational Leadership and Management course in the School of Education at Unitec New Zealand.

The aim of my research project is to examine the relationship between professional development that has been provided in response to the implementation of the revised New Zealand Curriculum and self-reported changes in teachers' knowledge, skills and classroom teaching practices. The core of my research is to find out what types of professional development activities best support teachers to change their practice.

I am requesting your permission to carry out part of this study at your organisation. I would like to provide all teaching staff with a 15 minute questionnaire, interview one senior curriculum leader for 30 minutes and conduct a focus group with 6-8 subject leaders for approximately 40 minutes.

Throughout the research none of the participants or your organisation will be identified. If you wish to withdraw the organisation from the project, you will have the opportunity at any point within the data collection process and up to three weeks after the information has been received. At your request, I am able to provide you with a copy of the thesis before it is submitted for assessment.

I hope that you are happy for your colleagues to take part and that your organisation will gain a useful insight into the implementation of the New Zealand Curriculum and approaches to professional development, information which may be of use in your future strategic planning. If you have any queries about the research, you may contact my principal supervisor at Unitec New Zealand.

My supervisor is Eileen Piggot-Irvine, phone 09 8154321 ext. 8936 or email epiggotirvine@unitec.ac.nz.

Yours sincerely

Paul Bennett



1st July 2010

ORGANISATION CONSENT FORM

TO:

FROM: Paul Bennett: 4a Maraetai School Road. Maraetai. Auckland

DATE:

RE: Master of Educational Leadership and Management

I have had the research project explained to me and I have had an opportunity to have my questions answered. I understand that everything said as part of this study is confidential and none of the information provided will identify me, the staff or the organisation.

I agree for the organisation to take part in this project.

Signed:

BOT Chairperson

Name:

Date:

Signed:

Principal

Name:

Date:

APPENDIX 5



1st July 2010

INTERVIEW PARTICIPANT INFORMATION and CONSENT FORM

Dear Sir/Madam

My name is Paul Bennett. I am Assistant Principal at De La Salle College in Mangere and I am currently enrolled in the Master of Educational Leadership and Management course in the School of Education at Unitec New Zealand. I am requesting your help in the collection of data as part of a thesis course which forms a part of this Masters programme.

The aim of my project is to examine the relationship between professional development that was provided in response to the implementation of the revised New Zealand Curriculum and self-reported changes in teachers' knowledge, skills and classroom teaching practices. The core of my research is to find out what types of professional development activities best support teachers to change their practice.

I would like to interview you for about 40 minutes to discuss:

- How you implemented the revised New Zealand Curriculum
- What kinds of professional development activities and resources were provided for teachers
- Any changes that were made to the school curriculum and teachers' practice due to the implementation of the revised New Zealand Curriculum

The interview will be recorded, transcribed and then deleted. Throughout the research neither you nor your organisation will be identified and you are free to request that I do not use any of the information that you have given. At your request, I am able to provide you with a copy of the thesis before it is submitted for assessment.

I hope that you will agree to take part and that you will find the experience valuable. If you have any queries about the research, you may contact my principal supervisor at Unitec New Zealand.

My supervisor is Eileen Piggot-Irvine, phone 09 8154321 ext. 8936 or email epiggotirvine@unitec.ac.nz.

Yours sincerely

Paul Bennett



1st July 2010

PARTICIPANT CONSENT FORM FOR THE INTERVIEW

TO:

FROM: Paul Bennett: 4a Maraetai School Road. Maraetai. Auckland

DATE:

RE: Master of Educational Leadership and Management

I have had the research project explained to me and I have had an opportunity to have my questions answered. I understand that everything I say is confidential and none of the information that I give will identify me or my organisation. I am aware that I have the right to withdraw myself or any information that I provided for this research.

I agree to take part in this project.

Signed:

Name:

Date:

APPENDIX 6



1st July 2010

FOCUS GROUP PARTICIPANT INFORMATION and CONSENT FORM

Dear Sir/Madam

My name is Paul Bennett. I am Assistant Principal at De La Salle College in Mangere and I am currently enrolled in the Master of Educational Leadership and Management course in the School of Education at Unitec New Zealand. I am requesting your help in the collection of data as part of a thesis course which forms a part of this Masters programme.

The aim of my project is to examine the relationship between professional development that was provided in response to the implementation of the revised New Zealand Curriculum and self-reported changes in teachers' knowledge, skills and classroom teaching practices. The core of my research is to find out what types of professional development activities best support teachers to change their practice.

I would like you to take part in a focus group discussion for about 40 minutes to discuss:

- How you implemented the revised New Zealand Curriculum
- What kinds of professional development activities and resources were provided for teachers
- Any changes that were made to the school curriculum and teachers' practice due to the implementation of the revised New Zealand Curriculum

The discussion will be recorded, transcribed and then deleted. Throughout the research neither you nor your organisation will be identified. At your request, I am able to provide you with a copy of the thesis before it is submitted for assessment.

I hope that you will agree to take part and that you will find the experience valuable. If you have any queries about the research, you may contact my principal supervisor at Unitec New Zealand.

My supervisor is Eileen Piggot-Irvine, phone 09 8154321 ext. 8936 or email epiggotirvine@unitec.ac.nz.

Yours sincerely

Paul Bennett



1st July 2010

PARTICIPANT CONSENT FORM FOR FOCUS GROUP

TO:

FROM: Paul Bennett: 4a Maraetai School Road. Maraetai. Auckland

DATE:

RE: Master of Educational Leadership and Management

I have had the research project explained to me and I have had an opportunity to have my questions answered. I understand that everything I say is confidential and none of the information that I give will identify me or my organisation. I am aware that I have the right to withdraw myself or any information that I provided for this research.

I agree to take part in this project.

Signed:

Name:

Date:

