Co-constructed goal setting

An intervention to raise writing achievement

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Abstract

International and New Zealand research continues to identify student underachievement in writing. The present study examines whether co-constructed goal setting can improve primary-aged students' writing achievement. An intervention was implemented at a low-decile, urban contributing primary school, mid-way through the 30-week study. The intervention was delivered in the form of a professional development session, and was evaluated by comparing progress after the implementation with progress made in an equal period prior to it. The intervention sought to improve the teacher participants' (=4) understanding of how to effectively implement the practice of co-constructed learning goals. A quasi-experimental research design was used to identify the effect of co-constructed goals on the 86 year 4, 5, and 6 students' writing achievement.

A quantitative approach was first taken to monitor students' writing achievement; data were collected using the *e-asTTle (revised 2012) online learning and assessment tool*. A questionnaire administered at the beginning and end of the study was used to gain insight into teachers' perspectives on their own practice, and to monitor any changes resulting from the intervention.

The data suggested that the co-constructed goal-setting intervention was successful in raising the writing achievement of low-achieving students, although there was no significant effect on the achievement of the remaining participants. This is possibly because three out of the four participating teachers were found to have been employing co-constructed learning goals prior to the commencement of the study, which contributed to their students making consistently good progress over the 30-weeks duration of the study, including the period prior to the intervention.

The findings of the present study indicate that if implemented correctly, co-constructed learning goals can assist in raising the writing achievement of lower-achieving students.

Acknowledgements

This research has taken me on a journey which can be likened to a ride on a rollercoaster. There were many high moments when I felt like I was on top of the world, especially when new knowledge was gained. There were also lows when the task seemed too challenging and daunting, and I closed my eyes and wanted the ride to be over. However, as with every rollercoaster ride, there is an end, and now that I am able to look back on the journey and be grateful for each aspect of the ride. I was extremely lucky to have a team of people who gave me high fives when the moments were great, and also held my hand through those tough times, and I would like to express my appreciation for their support.

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1.1 Introduction

Writing is a curriculum area in which world-wide many students have been consistently underperforming (Dix & Cawkwell, 2011; Jenson, 1992; Limbrick, Buchanan, Goodwin, & Schwarcz, 2010; Parr, 2010).

To contribute to research on raising students' writing achievement, the present study investigated the impact of goal setting. In particular, this research focuses on the co-construction of learning goals—a process whereby students and teachers work together to set goals. This study was based on 86 students and their four teachers from one low-decile primary school. To observe the effects of goal setting on achievement, an intervention was implemented mid-way through the 30-week research period to compare progress made after the intervention, with progress made prior to it.

1.2 Researcher's background and personal motivation

My experience of over six years as a primary school teacher in a low decile multi-ethnic school has given me an understanding of the impact that effective teaching can have on student achievement. At the beginning of each school year, staff at my school analyse writing, reading, and numeracy achievement data from the previous year against *The New Zealand Curriculum* levels to see how many students are achieving at the expected curriculum level and National Standard for their age (Ministry of Education, 2007b). Teachers then identify students who need to accelerate their learning in order to achieve at their expected level. Over the last five years, for most year groups, over half of the students at my school have been achieving at or above the appropriate writing curriculum level. As shown in Table 1.1, exceptions to this were the Years Two and Three group, who have consistently had fewer than 50% achieving at or above the appropriate writing standard. Additionally, a substantially lower proportion of male students than female students, are achieving at or above the level expected for their age,

as illustrated in Table 1.2. As shown in Figure 1.1, these findings are in alignment with the achievement of male students across New Zealand.

In response to these findings, we implemented a school-wide intervention that focused on effective teaching to enhance students' writing achievement.

Table 1.1. Percentage of the study school's students at or above the National Standard for writing

	2010	*2011*	*2012*	*2013*	*2014*
Year 1	92	73	56	41	46
Year 2	59	61	46	30	28
Year 3	15	42	43	23	25
Year 4	65	81	74	61	72
Year 5	64	70	55	46	68
Year 6	39	31	61	59	70

Table 1.2. Comparison of the study school's percentage of female and male students National Standards achievement in writing

National Standards achievement	*2013*		*2014*		*2015*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Above	3	7	5	9	4	12
At	27	42	39	51	39	46
Below	57	38	43	27	44	34
Well Below	13	13	13	13	13	8

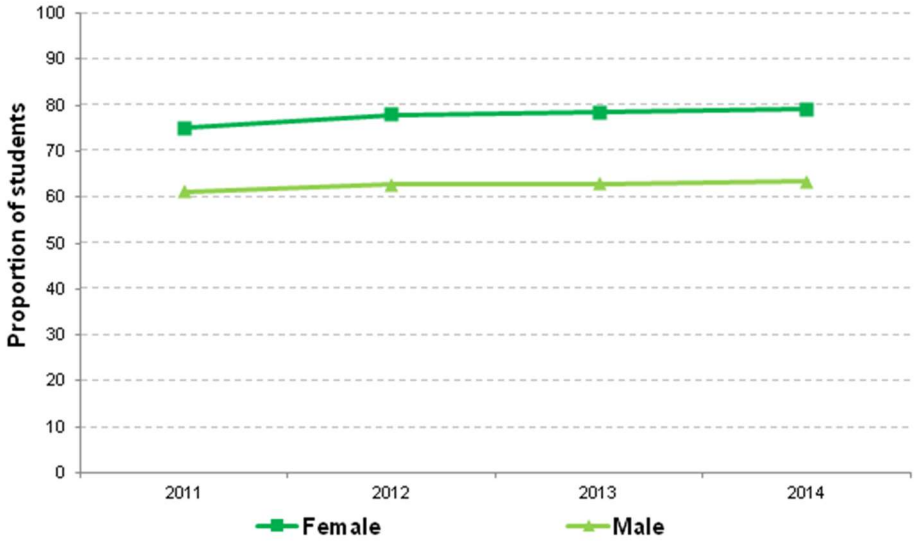

Figure 1.1. The proportion of female and male students achieving at or above the National Standard for writing, from Ministry of Education (2014).

Using a range of strategies, I discovered that some teaching practices were more effective than others. Effectiveness was evinced in student engagement, the ease with which students mastered new skills, and in their achievement levels. I also noticed that the effectiveness of a practice was dependent on how well I implemented it. For example, if I gave the whole class the same learning goal I found that many students did not achieve it, whereas when students' learning goals were based on their individual needs, all students attained their goals. Over a few years, I moved my practice away from being teacher dominated towards a more inclusive approach that saw students sharing an almost equal responsibility in identifying appropriate writing goals. I found that engagement, motivation, and achievement levels increased when students began setting their goals alongside me or their peers. The goal-setting process became an important aspect of my classroom programme, and goals were incorporated into every aspect of a lesson.

At the time, the school used an assessment tool based on *The Literacy Learning Progressions* (Ministry of Education, 2007a). These progressions describe and illustrate writing knowledge and skills that students need to know and be able to do in relation to *The New Zealand Curriculum*. This assessment tool showed that, over the time of implementing goals in my classroom, students' writing

achievement continued to improve more in each year than it had in the previous year, which convinced me that goal setting was having a positive impact on students' writing achievement.

My experience in raising students' writing achievement through involving them in the goal-setting process prompted further questions and ultimately, led to this empirical investigation, focusing on the influence of goal co-construction on writing achievement.

1.3 Writing in an international context

1.3.1 The United States of America

Over the last four decades, the United States Department of Education has released reports indicating that United States students from primary school to college, have consistently underachieved in writing (e.g., National Assessment of Educational Progress, 2011). Jenson (1992) hypothesised that this underperformance was attributable to gaps in students' knowledge of standard written English conventions, such as punctuation, spelling and word order. To explore this idea further Jenson conducted a study on the writing achievement of 135 freshman college students in Utah. Jenson's analysis of writing samples and of results from the English Usage Test from the American College Testing Program, showed that some 53% of students were not competent with using standard conventions such as punctuation and word order. These findings influenced Jenson to implement an eight-week course to remediate students use of writing conventions. Students attended classes three days a week, and over the eight weeks learnt how to use conventions correctly across a range of genres. All students wrote two essays at the completion of the summer course; however, there was no evidence of improvement in their writing competence. Additionally, an English Usage post-test was compared to an equivalent pre-test and identified that the students had not improved in this test either. In response to his earlier hypothesis, Jenson attributed the lack of development to the short eight-week time frame, he argued that it did not allow for a comprehensive coverage of all the

writing conventions; he also attributed poor teaching during students' earlier education as limiting the students' success in the intervention (Jenson, 1992).

Another response to the underachievement in writing in the United States was the implementation of the *Six Traits Analytic Writing* model (Education Northwest, 2016), also known as the *6+1 Trait Writing* model. This was developed in the 1980s by a number of United States teachers in collaboration with curriculum experts from Education Northwest (an educational laboratory based in Portland). The model provided United States teachers with an alternative to single scores based on standardised tests for assessing their students' writing (Education Northwest, 2016). The model rubric allows teachers to assess students' competence across a range of writing traits: ideas, organisation, conventions, sentence fluency, word choice, and voice. Using a rubric addressing these traits, teachers can identify their students' strengths and weaknesses and determine where they are achieving in comparison to their peers. Teachers could also use the rubric as a tool to guide their instruction by focusing on a specific trait (Education Northwest, 2016).

The National Commission on Writing (NCW) based in the United States, has recommended that the 6*+1 Trait Writing* model be implemented nationwide as a way of raising student achievement. Accordingly, the model has been implemented across all states, and additionally, in China, Great Britain and American Samoa (Education Northwest, 2016; Fry & Griffin, 2010). Despite the model failing to raise achievement, experts at Education Northwest and the NCW have continued to endorse the 6*+1 Trait Writing* model, when perhaps resources could be put towards establishing a more valuable model. Collopy (2008) and Kozlow and Bellamy (2004) have conducted studies to investigate claims made by the NCW that the model raises student writing achievement. Both studies had a similar participant composition—mostly middle-class white students with only a low percentage of students whose families received financial support (approximately 11%). Collopy's study and Kozlow and Bellamy's both used treatment and control groups with the treatment groups receiving an assessment and instructional intervention based on the 6*+1 Trait Writing* model. Data were

collected from both groups via writing samples prior to, and after the intervention. The findings confirmed that the model had little impact, in that there was no significant difference in the writing performance of the treatment and control groups (Collopy, 2008; Kozlow & Bellamy, 2004).

A criticism of the *6+1 Trait Writing* model is that it lends itself to inconsistent interpretation because its rubric only loosely describes each trait (Fry & Griffin, 2010). While these descriptors allow for competent teachers to individualise the rubric, it also leads to the potential for the model to be ineffective because teachers may incorrectly or inconsistently interpret descriptors of the traits. Additionally, the model does not take into consideration important aspects of the writing process such as planning and editing. A potential risk therefore arises, that teachers might focus entirely on the model and forgo these other important aspects of the writing process.

1.3.2 England

England's *National Curriculum* was first produced in 1989 and has been revised and republished almost every five years since, with the most recent edition being published in 2015. The *National Curriculum* was produced as a tool to support teachers' choices of lesson objectives, and to guide their assessment practice. While there was no official monitoring of students' achievement data in relation to the *National Curriculum*, school-based assessments have shown more students underachieving in writing than in any other subjects (Beard, 2000; F. Smith & Hardman, 2000). To monitor students' achievement data and school quality, the Office for Standards in Education (Ofsted) was formed in 1992. Since then, Ofsted has performed inspections of government-maintained schools ranging from early childhood to colleges, every four years. Initially, Ofsted found that the English section of the *National Curriculum* was being taught ineffectively, particularly in the area of literacy, as suggested by students' low achievement levels (Beard, 2000; F. Smith & Hardman, 2000). These findings were a driving force behind the launch of the United Kingdom's National Literacy Strategy (NLS) in primary schools by the Department of Education in 1997 (Parr, 2011; Shiel, 2003).

Created by literary experts, the NLS framework drew on the work of Clay (1979) and Slavin (1980), whose research focused predominately on raising the literacy standards of disadvantaged students. Clay and Slavin both recommended implementing specific practices, such as direct, interactive teaching, and a combination of shared and paired writing (Beard, 2000). They also recommended that teachers participate in frequent professional development to support them in implementing specific practices correctly. The four main strands of the NLS are outlined in Table 1.3 below.

Table 1.3. The main strands of the National Literacy Strategy

Strand 1	A national target – 80% of 11 year-olds will reach their expected standard by 2002
Strand 2	Framework for teaching including termly objectives and the daily *Literacy Hour*
Strand 3	Literacy training pack – a professional development programme
Strand 4	Community-based events such as Summer Literacy School

Note: adapted from Beard (2000).

Similar to the national implementation of the 6*+1 Trait Writing* model in the US, the National Literacy Strategy was introduced to all state primary schools in England in 1997, with the aim of lifting students' writing achievement. The Department of Education stipulated that the tightly structured *Literacy Hour* was an essential aspect of the strategy, and schools were expected to implement it immediately (Parr, 2011; F. Smith & Hardman, 2000). The *Literacy Hour* policy specified that teachers were to conduct a total of 30 minutes of whole-class teaching and 30 minutes of group writing sessions each day. The hour was to be structured as follows: 15 minutes of whole class instruction, followed by 15 minutes with a group (with the remainder of the class completing follow-up activities), a return to whole-class teaching for another 15 minutes, then 15 minutes of group work (again with the remainder of class completing follow-up activities). During each class and group instruction session, teachers were told to cover writing conventions such phonics, grammatical structures or other word-level work in spelling, punctuation and handwriting (Shiel, 2003). The daily *Literacy*

Hour was based on research by Clay (2005) and Slavin (1980) which discussed the benefits of teaching standard written English conventions frequently.

Both the National Literacy Strategy and the 6*+1 Trait Writing* model, encourage teachers to focus on one writing trait or convention per lesson. As Clay has noted, the acquisition of skills and knowledge is often easier for students when lessons are focused on one outcome, rather than on numerous outcomes (Clay, 2005; Timperley & Parr, 2009). However, the NLS focuses on mechanical conventions of written English, rather than on deeper features of writing, such as word choice or content, which are features of the 6*+1 Trait Writing* model.

Despite their similarities and differences, and their continued presence in schools, neither framework has delivered the growth in writing achievement that was expected (Collopy, 2008; F. Smith & Hardman, 2000). Both models, particularly the NLS, are quite prescriptive; they do not allow teachers to adjust their lessons to suit their students' particular needs. Some students require one-on-one support, and others prefer small group work. The one-hour time frame of the NLS does not lend itself to either. A quick internet search using the keywords *Literacy Hour* brought forth a number of news articles discussing teachers' concerns that some students are not challenged enough, such as those who are academically advanced, and some students are being left behind, such as those with learning difficulties. Eight years after the implementation of the NLS, *The Annual Report of Her Majesty's Chief Inspector of Schools 2005/06* indicated that despite previous efforts, "many schools are finding difficulty in raising standards in writing" (Office For Standards In Education, 2005, p. 53).

1.4 Writing in a New Zealand context

In comparison with other countries, New Zealand was slower to introduce large-scale monitoring of student achievement. In 1995, the National government implemented the *National Education Monitoring Project* (NEMP) to monitor and compare the achievement of year four and eight students within and across schools. Unlike monitoring projects in England and the United States, NEMP was not made compulsory, and the focus was on national monitoring rather than

school performance or accountability. NEMP participants were limited to a relatively small sample of year four and eight students, and every year, students were randomly selected from 260 of the approximate 2,120 schools in New Zealand (Flockton, Crooks, & White, 2006).

NEMP placed learning areas on a four-yearly assessment cycle so that a picture of progress over time could be created, illustrated in Figure 1.2. The main aim of NEMP was to provide a snapshot of student achievement in particular learning areas. However, a limitation of this project was the four-year cycle; conclusions could not be made about students' progress over time until a learning area was assessed for the second time (four years later). This meant that a substantial amount of time passed before the government and schools were alerted to any concerns, such as continued low achievement in a learning area. An example is that students' underachievement in writing was not recognised until the 2006 NEMP report, eight years after the initial writing data collection (Flockton et al., 2006). Limitations such as the restricted sample of year four and eight students, limited the applicability of the findings from the *National Education Monitoring Project* (NEMP) as the learning needs differ between students of different year levels. For example, NEMP's findings of the Year Four students group, can not necessarily be applied to students in Year Two. In 2010, NEMP was discontinued and replaced with another research project, with similar characteristics called the *National Monitoring Study of Student Achievement* (NMSSA). In addition to the characteristics of NEMP, NMSSA also reports on the Ministry of Education's priority learner groups: Māori and Pasifika students, and those with special education needs. Furthermore, this monitoring programme involves teachers in the development, trialling, and administering of the assessment tasks, as well as in the marking of student responses. This ensures that the tasks are relevant to the students, and that the marking process is comprehensive; both of these factors provide a more trustworthy snapshot of their achievement (National Monitoring Study of Student Achievement, 2012).

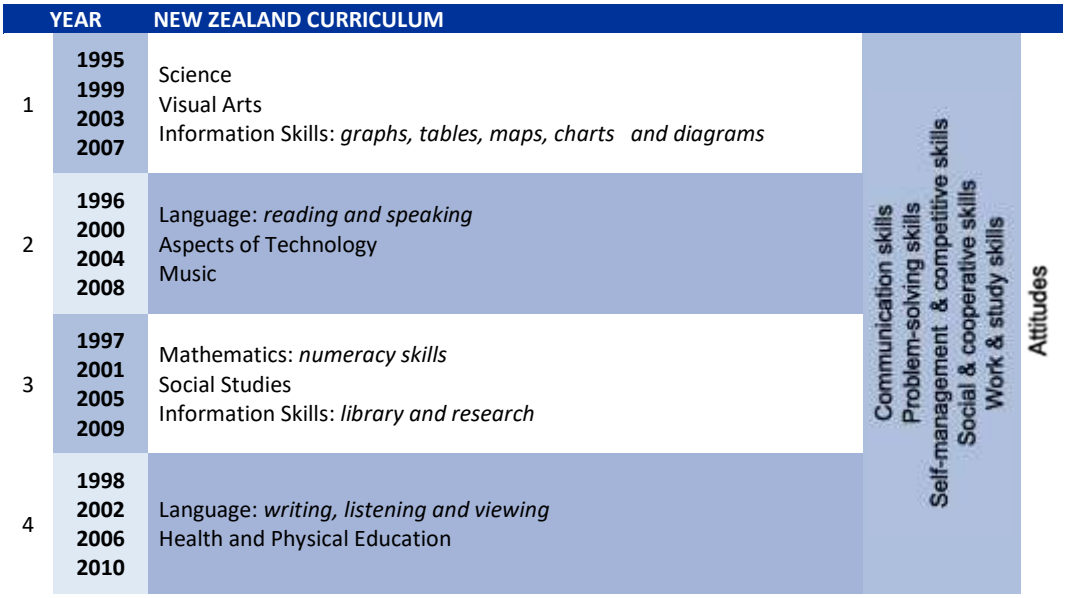

Figure 1.2. The second four-year cycle schedule for the NEMP project, National Education Monitoring Project (2010).

Unlike the response of the United States of America and England, New Zealand did not implement any interventions like the 6*+1 Trait Writing* model to improve achievement in writing. Instead, New Zealand developed another method in which to measure and monitor students' achievement. The intention to introduce National Standards in reading, writing and mathematics was a key feature of the National Party's election campaign in 2008. Following the election of the National government, the Education Act (1989) was amended, giving the Minister of Education authority to set National Standards. The National Standards system was designed in 2009 by the Ministry of Education with the advice of academics and education experts (John O'Neill, 2013). The aim was to provide "benchmarks of achievement for students in reading, writing, and mathematics in Years 1-8 for all state and state integrated schools" (Oakley, 2010, p. 2). Note that, unlike NEMP, National Standards focus on the achievement of individual students, and on the accountability of schools. At least twice a year, teachers were to make an overall judgement about a student's progress and achievement and to decide whether the student is working above, at, or below the National Standard for their year level. To inform an overall judgement, teachers collected a range of evidence from formal and standardised assessments (such as *e-asTTle*), classroom observations and student workbooks (Oakley, 2010).

For the first time in New Zealand, in 2012, it became compulsory for primary schools to submit their data, based on National Standards, to the Ministry of Education (John O'Neill, 2013). Specifically, schools are required to provide data on how many of their students are achieving below, at, and above the standards in reading, writing, and mathematics. Using these data, the government compares achievement across schools, and controversially, makes this information available to the public.

In contrast to NEMP's four-year cyclical structure, students' progress in reading, writing, and mathematics is monitored twice yearly. Using National Standards, schools are able to identify struggling students earlier, and provide them with the support they need to engage in learning (Oakley, 2010). A collation of National Standards data can be found on the government site *Education Counts*. In 2014 the following percentages of students were achieving at or above the standard: 78.0% in reading, 75.2% in mathematics and 71.1% in writing. Figure 1.3 demonstrates that, in comparison to reading and mathematics, there have been consistently fewer students achieving at or above the National Standard for writing. These results add to the findings of the 2006 NEMP report, and those of researchers, such as Limbrick et al. (2010), McNaughton (2008), Parr (2010) and Poskitt (2011), in evincing that the writing skills of New Zealand students in years 1 to 8 therefore remain a concern.

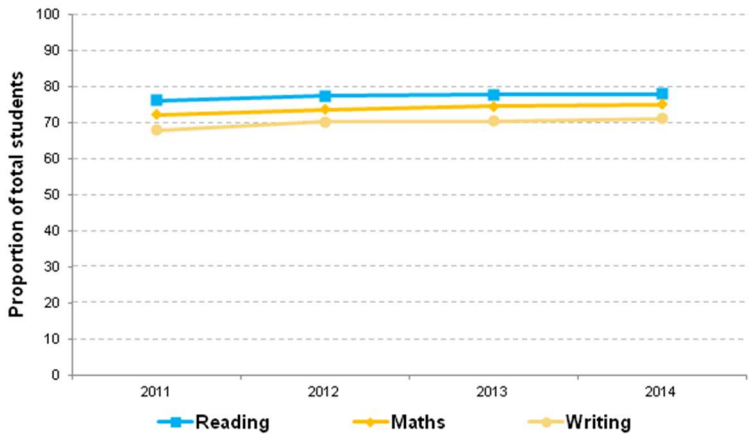

Figure 1.3. Proportion of students achieving at or above the National Standards by subject 2011-2014, from Ministry of Education (2014).

1.5 Validity issues in the literature

Despite being an area in which many students underachieve, there is noticeably less educational research that focuses on writing, in comparison to other learning areas such as reading and mathematics. Furthermore, a large proportion of the writing research comprises intervention studies with weak reliability and validity. An ideal intervention research design would involve a control group to confirm that the results of a study are due to an independent intervention variable, rather than to extraneous variables. However, in an educational context, the inclusion of control groups is often perceived to potentially disadvantage the students allocated to the control condition, especially if the intervention aims to increase their achievement. Due to these ethical concerns, control groups are often omitted from research designs. However, the lack of a control group reduces the validity of a study because we cannot rule out the influence of extraneous variables on any apparent treatment effects.

A substantial proportion of published studies on writing pedagogy are either meta-analyses or research syntheses. While these are beneficial for gaining an insight into collective findings on specific topics, limitations become apparent when the original studies that the meta-analyses or syntheses draw upon are also meta-analyses. An example of this is Hattie's (2008) meta-analysis of influences on student achievement. Hattie drew on four sources of literature to determine the influence that the quality of teachers' practices can have on achievement; however, three of these texts were themselves meta-analyses and the fourth was a literature review. Another example is Wang, Haertel, and Walberg's (1993) research synthesis on what helps students learn. Five of the seven texts synthesised were themselves syntheses, and the remaining two could not be located by the present author. An important limitation of meta-analyses and syntheses being based on other syntheses is that they are not based on actual research projects, and if they are, the original literature is often difficult to locate.

Additionally, due to the repeated summarisation of material, it is often inaccurate, which results in unreliable findings.

In fact, during my research on children's writing and the benefits of co-constructed goals, it proved difficult to locate many original research projects on which the present study could be based.

1.6 Explanation of the writing process

Prior to the 1970s, there was an international trend for teachers to perceive writing as a process focused on an end product, i.e., to finish a piece of work such as letter or poem. During lessons, teachers placed an emphasis on the genres and structure of these products rather than on how to use writing traits and conventions accurately, for example, language or punctuation. Under this approach, over the course of a school year, many students did not improve the quality of their work (Murray, 1968). Murray (1972) suggested that writing should be taught as a process, not as a product. He felt that writing should be focused on language discovery and on learning how to communicate. His book *A writer teaches writing: a practical method of teaching composition* (Murray, 1968) captured the interest of many teachers who were concerned about their students' lack of achievement. Consequently, Murray's suggestion was instrumental in changing the way in which writing was taught.

Murray's notion of writing as a process comprised three stages: pre-writing, writing, and re-writing. During the pre-writing stage, students were to develop their ideas through conversations, questioning and researching, and through planning their topics. During the writing stage, they were to engage in the act of writing and put their ideas and information into sentences. The re-writing stage, also known as revision and editing, encourages students to analyse their piece of writing so that they can find and fix errors, for example, punctuation and spelling errors, and also to check that they have met the texts purpose; and in doing so, students improve the quality of their work. Murray (2009), in addition with Applebee and Langer (2009) and Timperley and Parr (2009), argue that the re-writing stage of the process was essential for facilitating students' progress as

writers. These researchers suggest that it is during this stage that students are able to reflect on their writing, and either independently, or with teacher support, improve certain aspects.

Over time, educational researchers have adapted Murray's model to reflect their own beliefs. The most widely-accepted adaptation is that of Flower and Hayes (1981); they opined that Murray's writing process is oversimplified, and provided a theoretical framework describing all of the aspects that they believed that students employ while writing: pre-writing, drafting, revising, editing and publishing. Flower and Hayes emphasised writing not as a beginning-to-end procedure, but rather as an interwoven process, during which students often integrated these aspects.

1.6.1 Pre-writing

During the pre-writing stage, students generate ideas, find information and organise it into a plan. It is during this stage that they also set goals that they want to work towards attaining.

1.6.2 Drafting

Drafting involves students translating their plan into a written text. Students explain their ideas and make a conscious effort to address aspects of their goals. This stage is the most time consuming of whole writing process.

1.6.3 Revising

Revision can take place at any point in text composition—at the end of a sentence, a paragraph, or of an entire text. Revision involves students checking the readability of their writing, whether the text is meeting its purpose, for example, to inform readers about a topic, and involves improving the quality of words, sentences, and ideas. Revision also involves students checking on progress towards goals, and making changes to ensure that students are on track to attain them. Koutsoftas (2010) found that this component of the process often results in students producing an overall better product and that students find this part of

the writing process extremely challenging as it involves self-critique and a more objective point of view.

1.6.4 Editing

During this editing stage, students focus on detecting and correcting faults such as misspelt words, grammatically-incorrect sentences, and missing or incorrect punctuation.

1.6.5 Publishing

Publishing allows students to present their writing as a product that best serves the purpose and genre of the text, or to present their writing in a tidy manner after revising and editing it.

1.7 The historical development of writing in an educational context

Over the last three decades, the methods by which writing has been taught to primary students world-wide has been heavily influenced by not only Murray, and Flower and Hayes, but also by American researcher Donald Graves. He supported Murray's notion that writing should be taught as a process, rather than as a product, and focused his research on ways in which teachers can effectively teach the writing process. Graves was a former teacher, principal, language supervisor, professor and author, and is best known for helping educators to understand how students write. Graves' research in the late 1970s, came at a time during which educators believed that students should not write until they were proficient in reading and spelling (Swick-Slover, 2005). Graves disagreed and was of the opinion that from a young age students wanted to write and that therefore, educators should be developing writing skills alongside reading and spelling (Graves, 1978). Graves' interest in writing led him to undertake a number of observations of students engaged in the writing process. Graves (1978) argued that students needed time to process their thoughts and that the quality of their writing improves when they are involved in choosing their topics. As cited by Swick-Slover (2005), Graves also discovered that many teachers were not confident with teaching students how to write.

Graves went on to publish two books—*Writing: Teachers and children at work* (1983) and *A fresh look at writing* (1994). Both books are similar, but the latter is more comprehensive as it expands on the teaching approaches mentioned in the former book. In the first of these he asserts that "the teaching of writing demands the control of two crafts, teaching, and writing. They can neither be avoided, nor separated" (Graves, 1983, p. 5). In other words, a teacher must identify as a writer and as a teacher in order to teach their students how to write. Based on Murray's work, Graves noted in *Writing: Teachers and children at work*, to identify as a writer, teachers should first write for themselves so they can experience the process that students go through: planning, writing, editing, and publishing. He also noted that teachers should write with students as it provides an opportunity to further develop their own skills, as well as providing an opportunity to model the process of writing (Graves, 2003; Swick-Slover, 2005). Graves strongly believed that to enable students' success in writing, teachers must be effective in their practice, and to this end, throughout his career, Graves devoted time to supporting teachers in improving their practice by running professional development workshops, working with individual teachers, and speaking at educational conferences all over the world, including in New Zealand and Australia.

1.8 Teacher practice

As noted earlier, until the early 1980s, teachers, including those in New Zealand, focused on writing as an end product such as a letter or a story. However, after Graves had presented his ideas at a number of educational conferences, New Zealand teachers became enthusiastic about teaching writing as a process rather than a product (Ministry of Education, 1992). To support teachers in facilitating the process of writing, the Ministry of Education published *Dancing with the Pen: The Learner as a Writer* in 1992 which drew on the work of both Murray and Graves. The writing process is the main feature of this book, and it has been broken into four elements which reflect those in the process as defined by both Murray, and Flower and Hayes — forming intentions, composing and drafting, correcting and publishing, and outcomes, which entail sharing the writing with an

audience. Additionally, teachers are guided by goals as well as by descriptions of what they and their students should be doing in relation to each of these sub-processes. Furthermore, based on research by Graves (1978, 1983), *Dancing with the Pen* encourages teachers to write with their students throughout the entire writing process, using the practice of modelling. Modelling is an instructional strategy that allows students to observe the teachers thought processes. In the context of writing, teachers often use the strategy of modelling to construct a piece of writing in the presence of the students. Through visual support, modelling enables teachers to develop students' understanding of the mental and mechanical aspects of the writing process (Graves, 2003).

Dancing with the Pen comprehensively covers the basics of teaching students to write, and this books was widely used in primary schools during the 1990s until the early 2000s. It offers some practical advice and has a consistent message about the benefits of using the practice of modelling to engage and inform students. Due to its comprehensive nature, a lot of information is presented which can be overwhelming for educators. Ideally, presenting the information in a more succinct manner would increase its utility. It is also important that educators do not rely solely on *Dancing with the Pen* as it does not discuss other practices that literature has identified as being essential in supporting students' achievement, such as co-operative learning and positive teacher-student relationships (Sarwar, Zerpa, Hachey, Simon, & Van Barneveld, 2012; Slavin, 1980; Timperley & Parr, 2009).

Despite the influence of Graves on teacher practice, and support from *Dancing with the Pen*, achievement data collected through the *National Education Monitoring Project* (NEMP) showed that students in New Zealand continued to underachieve in writing (Flockton & Crooks, 1998; Flockton et al., 2006). Teacher practice continued to be viewed as one of the most influential aspects of education on student achievement. Accordingly, in 2003 and 2006 the Ministry of Education produced two books with the aim of supporting teachers in their practice (Patel, 2010). Entitled *Effective Literacy Practice in Years 1 to 4* (2003a), and *Effective Literacy Practice in Years 5 to 8* (2006), both books are structured in

identical ways but are pitched at different levels, they also focus on practices that hopefully lead to improved learning outcomes for students. The practices, as described in these books, are based on a range of case studies illustrating teachers experiencing success by using particular practices. Additionally, findings in New Zealand and international literature have also been drawn upon, for example, Flockton and Crooks (1998), Ministry of Education (1992), and Vygotsky (1978). Effective practices such as modelling, peer assessment, goal setting, guided reading and questioning are grouped under six different dimensions: expectations, instructional strategies, engaging learners with texts, partnerships, knowledge of the learner, and knowledge of literacy learning. Similar to *Dancing with the Pen: The Learner as a Writer*, the *Effective Literacy Practice* handbooks describe the role of the teacher and student in each section, and also provides examples of conversations and students' work.

The *Effective Literacy Practice* books describe the writing process as having four aspects – forming intentions, composing a text, revising, and publishing (Ministry of Education, 2003). While there is no reference to Flower and Hayes, the writing process as described in these books, closely resembles their work. The chapter then goes on to describe the process in detail, drawing on Graves's (1983) idea that to teach writing effectively, teachers must have a thorough understanding of writing itself. Teachers are also encouraged to use the practice of goal setting throughout the writing process; it is recommended that students take part in setting goals as this enhances their motivation and gives the students a sense of ownership over their learning (Ministry of Education, 2003).

The *Effective Literacy Practice* books describe a variety of effective practices that can be applied to a range of students and their learning needs. These books were created "to ensure that children receive the best possible teaching" and to raise students' literacy achievement (as cited in Patel, 2010, p.51). However, despite having a section dedicated to instructional strategies (for example, modelling, questioning and giving feedback), the *Effective Literacy Practice* books do not explain how best to teach these strategies, nor how to modify them to suit students' needs. Research by Hattie (2008) and Jenson (1992)

has shown that if practices are to be effective, teachers need to implement them correctly; therefore, by not providing specific detail, these books do not appear to support the primary purpose for which they were created. Furthermore, these books also do not provide information on effective formative assessment of students' abilities (Patel, 2010).

Further research on teacher practice by New Zealand researchers Dix and Cawkwell (2011), have demonstrated that a strong link exists between professional development, teacher practice and students' writing achievement. Dix and Cawkwell centred the design of their professional development intervention on the United States National Writing Project. Established in 1974 by the University of California, the National Writing Project was a professional development programme that offered teachers a five-week summer school programme in which they could experience the writing process and build their identities as writers. The National Writing Project's central tenet aligned with Graves's philosophy that "when teachers embrace their identity as a writer … students' engagement, understanding, and achievement can be enhanced" (Dix & Cawkwell, 2011, p. 43). For their study Dix and Cawkwell recruited six teachers from across four high schools and four primary schools in the Waikato region of New Zealand. Due to the longitudinal nature of the action-research project, sampling was non-random because the researchers wanted to work with participants in close proximity to the University of Waikato.

Over two six-day intensive writing workshops in January 2010 and 2011, Dix and Cawkwell developed teachers' identities as writers, and their practice of using peer-group response. Peer-group response involved students sharing their writing with peers, who first gave them positive feedback, and then offered suggestions on how the writers could improve his or her work (Dix & Cawkwell, 2011). It was hoped that this social practice would increase students' motivation, expose them to a wide range of writing abilities, and facilitate the process of receiving feedback that would be useful in the revising and editing of a piece of writing (Dix & Cawkwell, 2011). Following the workshops, the researchers

supported the teachers throughout the two years to implement what they had learned in practise.

Data were collected using surveys to which all 14 teachers responded to questions about their perceptions of teaching writing. Samples of students' writing were also collected at the beginning and end of each school year, but were not analysed. Despite the large-scale collection of data, Dix and Cawkwell's findings only drew on one teacher's experience as they wanted to discuss a case study in great detail. This teacher taught 18 Year Two students in a large rural primary school. Before the first writing workshop, the survey revealed that this teacher did not identify as a writer, and that she did not have a thorough understanding of the writing process in that her modelling and feedback were not related to specific aspects of it. At the end of the first year of the study, the teacher had incorporated peer-group response into her class writing programme. The teacher noticed that not only were her students more engaged in the writing process but also that, despite their young age, were able to provide their peers with constructive feedback. However, it was not until after the second workshop in 2011 that the teacher acknowledged she felt confident with using modelling and feedback to support her teaching of writing, and that she could now identify as a writer. At the end of the year, the teacher reported that her students' writing samples had improved in comparison to previous years writing samples.

In conclusion, Dix and Cawkwell argued that when teachers participate in professional development targeted at developing their knowledge on the writing process, students' achievement levels improve. However, the researchers' choice to discuss the findings of only one teacher, leads to questions regarding the results of the other teacher participants, and makes any generalisability of the findings implausible. Furthermore, there was no formal analysis of the students' achievement data, which decreases the validity of the teacher's claim that her students' writing improved. Nonetheless, this case study brings to light the notion that professional development needs to be intensive and repeated over after a period of time to ensure full comprehension by teachers.

Hattie is another New Zealand-based researcher whose work has shown that an improved practice can facilitate a higher-quality of learning. Hattie's research has influenced the way in which literacy is taught and assessed in New Zealand. His expansive career has involved advising the Ministry of Education (1999 to 2011) and creating the assessment tool *e-asTTle*. This tool assesses students' achievement in the learning areas of reading, writing, and mathematics, and is discussed in more detail in *Chapter Two*. Despite having only ever taught at a tertiary level, Hattie's research is primarily based on students in primary, intermediate and high schools. His lack of experience in teaching students at a primary school level has led some educators to criticise Hattie's credibility (Terhart, 2011). Additionally, the majority of his independently-published work are meta-analyses.

The aim of Hattie's (1992) meta-analysis was to demonstrate how data from the past 30 years can provide an insight into the effectiveness of schooling. While the literature included in his meta-analysis is not based exclusively on writing, Hattie's findings reveal teaching practices that can be applied across all learning areas, to help raise student achievement. Using 134 meta-analyses, Hattie found three underlying teacher practices that supported effective schooling: giving feedback to students, individualised instruction, and ongoing improvement to the quality of teaching (Hattie, 1992).

Giving feedback to students involves teachers commenting on students' performance in relation to specific skills. However, feedback is more effective when it includes explicit information that supports students in progressing further with their learning, for example *can you use adjectives to describe your hair so that readers can picture it in their mind?* Hattie's second underlying strategy involves teachers considering the needs of their students. A teacher can then tailor their instruction to suit the requirements of individual learners. For example, some students have short attention spans, so the teacher might include peer sharing frequently to break up their instruction. And lastly, ongoing improvement to the quality of learning involves teachers reflecting on their practice and making deliberate attempts to improve it, to ensure their instruction is of high quality

(Hattie, 1992). This may involve a teacher attending professional development workshops, or improving their content knowledge. Hattie's meta-analysis found that, when teachers employ one or all of the above, students showed greater increases in their achievement than when these practices were not employed.

In 2008, Hattie published a significantly larger meta-analysis relating to student achievement. He analysed over 800 meta-analyses and he found 138 potential influences on student achievement in reading, writing and mathematics (Hattie, 2008). Hattie reported a statistical effect size in relation to each influence, so that readers could distinguish between high and low influences. Examples of influences with high effect sizes included self-report grades, micro-teaching and acceleration; influences with low effect sizes included television, diet and retention. Hattie found that the 138 influences could be categorised into six themes – *Student*, *Teacher*, *Curricula*, *Home*, *Teaching* and *School*. Using statistical calculations, Hattie identified the themes of *Teacher* and *Teaching* as having the strongest effects on student achievement (Hattie, 2008). Influences in these two groups could be linked directly to teachers' practices—such as clarity, goal-setting, feedback, teaching strategies, and direct instruction. In general, Hattie highlighted the importance of teachers being effective in their practice, and in relation to the present study, goal setting was identified as a practice which could potentially have a strong influence on students' writing achievement.

In New Zealand, there are systems in place which review the effectiveness of teachers' practices. The Education Review Office is the New Zealand government department responsible for reviewing schools and evaluating curriculum implementation in New Zealand. In the past, the evaluation of education topics, at the time known as curriculum reviews, were aligned with the *National Education Monitoring Project* (NEMP) cyclic structure during its implementation. The Education Review Office no longer follows a cyclic structure but continues to follow the NEMP format of reviewing Years 4 and 8 (Education Review Office, 2007). Their focus is no longer solely on curriculum areas such as writing or science, but rather on topics that are currently an issue for New Zealand schools such as connecting with parents and whānau.

Due to the persistent underachievement of New Zealand students in writing, in 2006 the Education Review Office focused on the quality of teaching of writing in Years 4 and 8, visiting 159 state schools during Term 4 of 2006. Their report titled *The Quality of Teaching in Years 4 and 8: Writing* established the fact that, amongst the teachers of the participating 159 state schools, "95% (of teachers) stated that they felt confident in and capable of teaching writing" (Education Review Office, 2007, p. 11). However, observations of teachers' practices and achievement data showed that only 41% of teachers met the criteria for being rated as highly effective, with 13% rated as needing to improve their practice significantly, and the remaining 46% identified as needing some improvement. The main finding of this report was that underachievement in writing could be attributed to ineffective teaching. The report is in alignment with Hattie's (1992) findings and it also suggested that schools needed to facilitate professional development to up-skill their teachers.

In response to the recommendations made by the Education Review Office, Limbrick et al. (2010) conducted a study to investigate whether professional development has an impact on student achievement. Specifically, the researchers wanted to find out whether an improvement in teachers' knowledge of the writing process would have an effect on students' writing achievement. The two-year longitudinal study of Limbrick and colleagues' involved 40 teachers from six low-socio economic urban primary schools in New Zealand. Participants taught students in Years 2, 4, 6 and 8, and their students were predominately of Māori and Pacific Island descent. Prior to conducting the study, the researchers found via observations and conversations, that teachers lacked confidence in their knowledge of the writing process. They also found that assessment tools were not being used to inform teaching decisions (Limbrick et al., 2010). Additionally, baseline writing achievement showed exceptionally low levels of writing achievement. With an overall aim to improve achievement levels, Limbrick and colleagues designed a professional development programme which focused on using the assessment tool *English in the New Zealand curriculum; English writing exemplars* (Ministry of Education, 2003b) to increase teachers' knowledge of the

writing process. The professional development programme was delivered over the four school terms, during school-based meetings twice a term. During these meetings, teachers used the exemplars to identify students' writing strengths and weaknesses. They then reflected upon their own practice and set goals related to aspects that needed improvement, with the aim of supporting students to succeed in writing.

At the end of the first year the researchers found that teachers' knowledge of writing was enhanced, and as a result, the assessment tool *e-asTTle* showed that their students had made greater than average gains in their writing achievement. The researchers and participating schools continued the study for another year to reaffirm its success. Results at the end of the second year were identical to those of the first year; students' writing performance had improved more than expected, teachers were confident with discussing aspects of the writing process and assessment was being used to inform their practice.

However, one limitation of this study was that Limbrick and colleagues did not have a control group and therefore, the possibility that students' progress was a result of normal progression cannot be ruled out. Additionally, with no control group, confidence that students' progress was solely a result of the professional development is limited.

In an international context, the United States Department of Education since the 1970s, has been urging schools to increase teachers' professional development to support improvement in students' writing achievement. To investigate whether this recommendation would have any actual effect on student achievement, Tienken and Achilles (2003) conducted research on five, 4th-grade American teachers and their combined 98 students. Their design included both control and treatment groups to investigate whether professional development, focused on teacher instruction, is an effective method for raising student achievement. Initially, Tienken and Achilles found that all teacher participants used a presentational mode to deliver their lessons, for example, they typically only taught to the whole class and their instruction was predominately teacher-

led. Past research using quantitative achievement data has shown that this type of instruction does not typically lead to high student achievement (Hillocks, 1987; Tienken & Achilles, 2003). As a result of their initial findings, Tienken and Achilles tailored two professional development sessions which focused on using an environmental mode to deliver lessons. This included a collaborative learning approach in which students interact with others and lead discussions and learning.

After 10 weeks, Tienken and Achilles (2003) observed the teachers in the treatment group and noticed that they were implementing the content learnt in the professional development sessions. Additionally, a narrative writing assessment at the conclusion of the study showed that students' writing achievement was significantly higher than students in the control group. Based on their findings Tienken and Achilles (2003) therefore concluded that the professional development did indeed have a direct impact on students' achievement. However, a pre-test was not conducted and, therefore, the treatment groups achievement data cannot be solely attributed to the change in instruction.

Despite the positive findings, the small sample size of teachers limits the applicability of Tienken and Achilles data. It would be beneficial to replicate this study but involve a range of teachers with varying characteristics, for example, experience, age, and pedagogy, and to source teachers from a variety of schools of different deciles, sizes, and location (urban/rural). Another limitation is the manner in which the professional development was delivered. The two teachers in the treatment group received one-on-one professional development which is not a realistic scenario for schools who often have limited time, budget and large staffing numbers. If Tienken and Achilles programme were to be implemented with a large group of more diverse participants, the method of delivery would have to be adjusted.

The discussed studies provide empirical evidence that professional development is an effective way to improve or change teachers' practices. In relation to writing, professional development should ideally focus on developing

teachers' knowledge of the writing process or on specific practices that have been shown to improve students' achievement such as goal setting, or co-operative learning (Hattie, 2008). Additionally, the difference between successful and unsuccessful outcomes in a pedagogical intervention is often dependent on the quantity and quality of support received throughout the intervention. Research by Dix and Cawkwell (2011), Graves (2003), Hattie (2008), Limbrick et al. (2010), and Tienken and Achilles (2003) suggests that experts (researchers, literacy leaders, proven effective teachers) need to be consistently involved throughout the year to maintain enthusiasm and to provide continuous feedback on teachers' practice.

1.9 Goal setting theory

A goal has been defined by Carr et al. (2014) as "an object or aim of an action that an individual is trying to accomplish" (p.225). Goal setting, in a management context, was first introduced as by philosopher Edwin Locke in the 1960s and was prescribed as a method to enhance employee motivation and performance in the workplace. According to Locke's theory, there are five characteristics of successful goal setting (Locke, 1996). A goal must be specific, challenging but not impossible, there must be a commitment from both employee and employer, frequent feedback should be given on goal progress and complexity of the task should be appropriate to the employee's ability (Locke, 1996). Edwin Locke, in conjunction with Gary Latham, has strengthened his goal setting theory over the last 35 years by applying it to over 40,000 research participants ranging from children to factory workers and scientists—boasting a success rate of 90% for improved participant motivation through goal setting (Locke, 1996; Locke & Latham, 2002).

Locke's goal setting theory has been influential on educational research worldwide. In particular, goal setting is prominent in educational literature (Cheung, 2004; Martin, Durksen, Williamson, Kiss, & Ginns, 2014) as a method to increase student engagement and achievement. A common theme across goal-setting literature is the categorisation of goals which is illustrated in Table 1.4. Product goals, also known as performance goals, are based on end results such as,

to achieve a specific score on a test, and to write a certain number of sentences. In contrast, process goals, also known as mastery goals, focus on attaining a specific skill that will enhance students' knowledge and achievement, for example, how to write a grammatically correct sentence.

Table 1.4. Goal categorisation

Product/Performance Goal	Process/Mastery Goal
Extrinsic/ability/end result focused, e.g., write a whole paragraph, spell X amount of words correctly, score X/100	Intrinsic/technique/skill focused, e.g., learn how to use a range of punctuation correctly
Supports learning by focusing students on an end result	Concentrates on acquisition of new skills
Often measured through a score	Often measured through application of skills
Avoidance of challenging tasks can occur	Known to enhance motivation to learn
Scores used to decipher underperforming, over performing and normality	Frequently supported with specific learning steps/criteria

In 1993, Schunk and Swartz conducted a study to investigate claims that process goals can make more of an impact on student achievement than product goals. In particular, Schunk and Swartz wanted to observe the different effects that product and process goals could have on students' writing achievement. Their participants came from three classes across two schools in America, where students were predominately middle class and were of a variety of ethnicities. Students (n=60) were randomly assigned within their own class to one of the following experimental conditions – product goal, process goal, process goal plus feedback or general goal (for example, *try to do your best*). Over a 20-day timeframe, groups in the same condition met daily and received a 45-minute instructional session which was provided by teachers from outside the school. The sessions focused on using the group's experimental condition; for example, the product group received instructional sessions on writing a certain number of lines per paragraph, and the process group received instruction on how to write a paragraph. The teacher modelled the different genres, and when the students

were working independently on their paragraphs, reminded them of their process or product goal. Schunk and Swartz collected data using a pre and post writing assessment, which showed that there was a significant improvement in the achievement of the process goal and process goal plus feedback groups, but there was no change in writing achievement of the product and general goal groups. To further test their approach, Schunk and Swartz (1993) implemented an identical study on students in Grade three and achieved the same results, concluding that process goals had a positive effect on students' writing achievement.

Palmer and Wehmeyer (2003) also demonstrated success in the use of goal setting with students with learning disabilities. For two months they followed 14 teachers across two states of America who taught students between the ages of 5 and 9 years. Across these 14 teachers and their students (n=50), there were 21 students who had a learning disability, six who had a severe mental disability and five with impaired speech (Palmer & Wehmeyer, 2003). The purpose of Palmer and Wehmeyer's study was to find out if young children with a variety of learning needs were capable of setting goals for learning, and additionally if their teachers were able to implement goal setting. The goal-setting model used in this study (Wehmeyer, Palmer, Agran, Mithaug, and Martin, 2000) was instructional in nature and progresses students towards self-directed learning, with goal setting being a key component. The model encouraged students to use process goals to support them in learning and mastering new skills. Students answered a number of structured questions such as, *what do I want to learn?* and *what do I know about it now?* These questions led students towards formulating goals and thinking critically about the steps they needed to take to achieve the goal. Throughout this goal-setting process, the teacher supported students through actions such as clarifying words and engaging in conversations. The amount of support given by the teachers was dependent on the students' needs. Teachers in Palmer and Wehmeyer's study participated in two professional development sessions on how to best implement their goal-setting model. Data were collected using a *Goal Attainment Scaling* process under which students were presented with five potential goal outcomes, and they selected the one that best matched their goal

outcome. Teachers also selected an outcome for each student based on their observations. Their answers were then compared to see if both the teachers and students had a mutual understanding on whether a goal had been attained. While no achievement data were collected, the *Goal Attainment Scaling* process provided an indication of whether a student had achieved a goal or not; it was essentially an assessment tool for teachers and students. Palmer and Wehmeyer found there was no significant difference between the students' and teachers' outcome ratings, demonstrating that students of all ages were capable of accurately measuring their own success. Additionally, scores from the *Goal Attainment Scaling* process showed that all (n=42) but six students attained their goals.

Palmer and Wehmeyer's (2003) study provides empirical evidence that all students are capable of setting goals, no matter their age or their ability to learn. The researchers also found that, when students think critically about the steps they need to take to attain a goal, they are highly likely to achieve it. A limitation of the study was that a significant amount of time was required to introduce the goal-setting process to students and to prepare resources to support the goal-setting process. For the model to be successfully implemented on a large scale, some amendments would have to be made to overcome the time limitation. Additionally, to further strengthen their findings, an analysis of achievement data would have demonstrated if their self-directed learning model had a direct impact on students' writing achievement.

The intervention in Moeller, Theiler, and Wu's (2012) American-based study, also used a structured goal-setting model to observe the effects of goal setting on student achievement. *LinguaFolio* is a structured portfolio that guides students through the practice of setting process goals, self-assessment and the collection of evidence to prove that they had been attained. Students were responsible for writing their goals down and collecting evidence from their learning, which was kept in ring binders in their desks. This promoted ownership for the students. Moeller and colleagues implemented *LinguaFolio* in 16 Spanish language classes across 23 high schools in Nebraska. Sixteen teachers were

selected through purposive sampling so that the same teachers and students could be followed over a five-year period. Over the five years, teachers guided their students with using *LinguaFolio*, with the amount of support decreasing over time as students became more familiar with the portfolio. Quantitative data were collected yearly through standardised reading, writing and speaking language tests, and, additionally, the researchers created a rubric to score students' portfolios. Little information was given on the rubric but the researchers went through a rigorous moderating process to ensure accurate scoring. Moeller and colleagues found a statistically significant relationship between students achieving at the expected level or higher on the language test, and achieving high scores on their use of *LinguaFolio* (a high score indicates accurate goal setting, self-assessment, and collection of evidence). Over the five years of their study, the researchers found that there was a consistent increase in students' language achievement that was greater than expected, as well as, an accurate use of *LinguaFolio*. Moeller et al. (2012) concluded that goal setting has a direct positive impact on student achievement.

The longitudinal nature of this study adds to the validity of its findings. However, in the absence of a control group it is difficult to rule out achievement being attributable to other factors such as natural progression or additional teacher practices. Despite its limitations, the findings of Moeller and her colleagues study, highlights the fact that high school students are capable of setting goals and identifying when they have achieved them; which can support them in their achievement.

Locke's introduction of the goal setting process in the 1960s has led to educational researchers organising the process into structured models such as the *Self-Determined Learning Model of Instruction* and *LinguaFolio*. The intention behind organising the process in this way is to provide teachers and students with an easy-to-follow tool that facilitates effective goal setting (Palmer & Wehmeyer, 2003).

1.10 Goal setting, social constructivist theory and motivation

In the early 1930s, Vygotsky focused his work on the idea that students can enhance their cognitive ability when they work alongside others who are more competent. Vygotsky's social constructivist theory became increasingly popular during the 21st century as a way for teachers to vary their delivery of instruction and influenced the creation of eminent practices such as co-operative learning—a method in which students work together, and scaffolding – when an expert breaks down a learning task into manageable parts to help someone who is less of an expert (Wood, Bruner and Ross, 1976).

Vygotsky's social constructivist theory advocates students working co-operatively with their peers, family or teachers (Ames, 1992; Veenman, Kenter & Post, 2000). Collaboration with others is theorised to increase student engagement and to support students in acquiring new knowledge and skills outside of their current capabilities—their Zone of Proximal Development (Dyson & Freedman, 2003; Gieselman & Farruggia, 2000; Thompson, 2013). In Thompson's (2013) single participant qualitative study, a student who had previously struggled with composing a text found success when a writing task had the option of collaborating with a peer. Prior observations had shown that the student was disengaged and struggling to put his ideas into sentences; however, when the teacher provided the option for the student to collaborate with others, this particular student was engaged and was participating equally in the writing process. Furthermore, when the student returned to the task at a later date, they were able to complete the writing task independently. Formal classroom assessments also showed that the student made more progress with his writing achievement than they had in the prior term. Figure 1.4 demonstrates the different Vygotskian zones that students can access while learning. The first zone is what can be learnt independently, the middle zone is what can be learnt with support from peers or adults (the Zone of Proximal Development/ZPD) and the last zone is learning that is not within a student's cognitive ability. There are very few studies on the direct effect of teachers scaffolding students into their ZPD;

instead, studies on collaborative/co-operative learning based upon Vygotsky's theoretical framework are prominent.

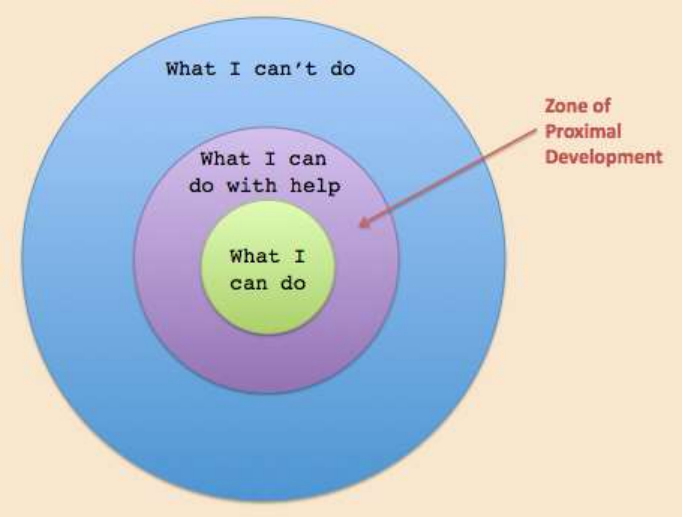

Figure 1.4. Vygotsky's Zone of Proximal Development, from Innovative Learning (2016).

A research synthesis of formative assessment conducted by Black and Wiliam (1998), also advocates social interaction as a means of increasing student engagement and achievement. Black and Wiliam suggested that students show greater gains in knowledge and achievement when they are involved in the assessment of their own work (1998). They attributed this increase in achievement to students being required to have an understanding of both the learning objectives and their achievement criteria in order to self-assess, thus making the new learning more explicit and potentially more achievable.

Goal setting is a complex task (Elliott & Dweck, 1988), and Locke (1996), Schunk (1991), and Zimmerman (2008) found that when students set goals independently, they were often unrealistic and too hard to achieve. However, with support from teachers or peers, the complexity of goal setting can be made easier and students can participate in goal setting to access their ZPD's. An alternative is for teachers to allocate goals to students. However, Zimmerman's (2008) research synthesis found that goal setting was ineffective when teachers assigned students their goals, possibly because teacher-assigned goals did not develop a sense of self-efficacy. Instead, a number of researchers have argued that students should

have an active role in the formation of their goals and success criteria, and in the monitoring and assessment of their progress towards goal attainment (Dyson & Freedman, 2003; Edwards, 2013; Hattie, 2013; Moeller et al., 2012).

Student motivation is frequently reported to be positively influenced by students setting goals alongside their teacher or peers (Cheung, 2004; Edwards, 2013; Sarwar et al., 2012; Schunk & Swartz, 1993). When students are motivated they are more likely to exert high levels of effort, persist at a task over time, and to experience increased achievement (Zimmerman, 2008).

Wolters, Yu, and Pintrich (1996) investigated the idea of goal setting being a motivational practice by observing which goal orientation best-stimulated motivation in students. As noted previously, there were two common goal orientations that teachers and students used—process and performance—but in Wolter and colleagues' study, they are known as learning *goal orientation* and *performance orientation*. Learning goal orientation focused on mastering a skill, and performance orientation focused on attaining a certain grade. Wolters and colleagues' study involved 434 seventh and eighth-grade students from a mid-western American junior high school. The researchers used a correlational design and collected data using questionnaires that assessed students' motivation, cognition and goal orientation. Wolters and colleagues also collected students' English, mathematics and social studies grades. Both the qualitative and quantitative data were collected at two time points—at the beginning and at the end of the school year. Their results showed that students who implemented a learning goal orientation were inclined to be more motivated, than those with a performance orientation goal, as well as having a range of strategies to achieve their goal. The majority of these students also achieved at, or above, the level expected for their age in all three learning areas. Conversely, their findings showed that students whose goals had a performance orientation tended to be less motivated, and their achievement grades were lower. However, it is difficult to argue that the higher achievement grades are solely the result of students' learning goal orientation. The design of Wolter and colleagues' study leads to the

potential for extraneous variables (e.g., teachers' practices and prior high levels of motivation), to be a contributing factor to their study's findings.

Unlike other studies on goal setting, which mainly focus on teachers and their practice, Wolter et al (1996) have focused on students' perspectives of goal setting. The benefit of focusing on students' perspectives is to provide insight into how students viewed their use of goals, and how well they comprehend the goal-setting process. Wolters, Yu, and Pintrich found that, regardless of whether students used a learning goal or performance goal orientation, they enjoyed setting goals with their teachers. However, a disadvantage of focusing only on students' perspectives, is that they can be impressionable and are more likely to provide answers that they think the researchers want to hear, rather than answering truthfully.

To find the most significant influences on learning, American-based researchers Wang, Haertel, and Walberg (1993) analysed 11,000 statistical research findings. The five influences that they identified as having had the greatest impact on students' learning, reflect those of Hattie's (1992;2008): classroom management, metacognitive processes, cognitive processes, home environment/parental support and student/teacher social interactions. Their synthesis identified goal setting as engaging students in cognitive processes, and as an opportunity for students and teachers to interact in a different manner than is typical. Wang and colleagues reported that, when students worked co-operatively alongside their teacher to set a goal, they were "motivated to try harder" (as cited in Jan O'Neill, 2004, p. 34).

Inspired by the synthesis written by Wang et al. (1993), Burleigh Elementary School implemented the practice of goal setting with the hope that it would raise students' achievement levels. Jan O'Neill (2004) described Burleigh Elementary School in America as having a history of being the lowest performing school in its district, with 20% of its students achieving below the expected level in state and district assessment of reading, writing, and mathematics (Jan O'Neill, 2004). To support teachers in implementing goal setting, the school used the

SMART goal process which prescribed five criteria, elaborated in Table 1.5: *Specific, Measurable, Attainable, Relevant and Timebound* (SMART).

Table 1.5. Criteria for the SMART goal-setting process

Specific	Measurable	Attainable	Relevant	Timebound
The goal needs to be specific, clear and focused on one aspect.	It should be possible to measure the goal using tools such as tests, time or observations in order to track goal progress.	Goals need to be realistic and reachable. It is highly likely that a goal will be abandoned if it is unrealistic.	Goals have to be relevant to the learner's needs, and not based on what they think they should be learning, but rather what they need to learn.	A time frame should be given in which the goal will be achieved to maintain accountability.

Firstly, teachers identified aspects of their practice that they wanted to improve in order to support their students' achievement, and then used the SMART process to set professional learning goals. Throughout the process, teachers reported feeling a sense of empowerment, motivation, and responsibility to achieve their goals. Based on their experience, and the recommendations made by Wang et al. (1993), all teachers at Burleigh Elementary School incorporated goal setting into their reading, writing, and mathematics programmes so that their students could experience the same benefits that they had, had. Initially, teachers heavily supported their students with setting goals but found that, as students developed their understanding of the SMART process, they naturally increased their contributions (Jan O'Neill, 2004). Ten weeks after the intervention, teachers reported that their students were engaged in learning and that they were increasingly motivated to perform well. Additionally, state tests and district writing assessments implemented at the end of the year showed that student achievement levels also increased; between 2001 and 2002 the number of 4th graders who achieved the level expected for their age in the state writing test improved from 32% to 52%. Similarly, on the district writing assessment the percentage of 4th graders achieving at the expected level improved from 41% to

52%, and 5th graders improved from 51% to 65%. While the management team and teachers at Burleigh Elementary School were pleased to see progress, they had expected a higher percentage; the initial goal they had set was for 80% of students to be achieving at or above the expected level in writing (Jan O'Neill, 2004). Unfortunately, it is difficult to determine whether the increase in student achievement was solely attributable to students setting goals, or whether they continued to improve their achievement. However, a 2013-2014 *School Report Card* published by the Wisconsin Department of Public Instruction (accessed 2016) gave Burleigh Elementary School an accountability rating of 83.4 indicating that its students had exceeded expectations in student attendance and performance. Additionally, Burleigh was no longer classified as being the lowest achieving school in its state.

Jan O'Neill's (2004) article on Burleigh Elementary School showcases ways in which teachers can implement goal setting with their students and identifies some of the associated benefits. In particular, the case study demonstrates that when students work alongside their teacher, they can access learning that would otherwise be inaccessible, and experience success with setting goals.

Through working co-operatively with either a teacher or a peer, goal setting can be made accessible to students with learning difficulties or who speak English as a second language (ESL). Language barriers make independent learning difficult, whereas frequent social interaction enables ESL students to learn more successfully (Ames, 1992). Edwards (2013) conducted a study to find out if ESL students could set process goals co-operatively with their teachers, and what impact this would have on their writing achievement. In this study, Edwards was both the researcher and teacher. Participants were enrolled in Edwards' Academic English course that supported mixed-nationality students in gaining entry to an Australian University. Over eight weeks, Edwards supported her students through three cycles of goal setting that focused on their writing achievement. Working alongside Edwards, students used a writing assessment rubric to identify the level they were currently working at, the level at which they needed to achieve, and the steps they were going to take to attain this level. During the third cycle of goal

setting, Edwards encouraged her students to complete the goal-setting process independently. However, all students found it difficult to identify the steps needed to attain their goals. When teacher and peer support was reintroduced for this particular aspect of the process, Edwards found that students were then successful as a result of working collaboratively with her and their peers. Edwards' study also found that as students became more confident with setting goals, their motivation to achieve their goals and to complete work to a high standard increased. Additionally, students' writing scores increased over the eight-week period. However, a limitation of this study was that some increase in score is expected over this amount of time and, it is difficult to solely attribute the increase to the goal setting intervention.

1.11 Overview of the present study

1.11.1 Summary of theoretical elements

Concern regarding students' underachievement in writing can be traced back to the 1970s when Graves first raised the issue that many teachers were not successful in their writing instruction. His later (2003) research found that many students were disengaged and were not performing to their potential in the area of writing. In alignment with Graves' claims, government reports from England, the United States, and New Zealand have shown that groups of students continue to underachieve in writing.

The framework of this research is largely based on Locke and Latham's 1960 goal-setting theory. Additionally, empirical evidence over the past 50 years has suggested that goal setting is an effective practice for improving students' motivation and achievement; although the sources on which this evidence is based are low in validity and reliability because of limitations in their research designs (for example, absence of a control group, or quantitative achievement data).

Currently, goal setting is a standard teacher practice implemented in many New Zealand classrooms; however, teachers generally assign students their goals (Alton-Lee, Timperley, Parr & Dreaver, 2012). When goals are prescribed by a

teacher there is a high chance that students will misinterpret them, fail to see their relevance, or misunderstand the language associated with the goal, and as a result, students often do not attain them (Locke & Latham, 2002; Schunk & Swartz, 1993). Whereas, according to Johnson and Johnson (2009), and to Vygotsky (1978), learning is more purposeful and successful when it is completed in a social setting; this notion was influential on the development of the intervention for the present study. Additionally, a body of research suggests that goal setting is more effective when students set their own goals or do so in collaboration with a teacher or peer (Ames, 1992; Carr et al., 2014; Cheung, 2004; Dix & Cawkwell, 2011; Hattie, 1992; Jan O'Neill, 2004).

Based on the findings of other studies, the present study's intervention encouraged teachers to set process goals with their students, rather than product goals. To decide what the students' process goals would focus on, their most recent piece of writing was analysed to identify a trait that they, individually, needed to improve. Thus, the intervention did not typically lend itself to the formation of product goals.

Currently, there are few studies that examine the combination of collaborative goal setting and monitoring of student achievement. The paucity of research in this area limits our understanding of how effective collaborative goal setting is. The present study seeks to contribute to filling this gap by investigating whether a co-constructed goal setting intervention can improve students' writing achievement.

1.11.2 Research overview

A quasi-experimental design was used and the research took place over three terms in a low-decile urban contributing primary school. Four teachers and their Year 4-6 students (n=86) were selected to participate in the study. Data were collected at three time points, fifteen weeks apart. Time 1, at the beginning of the research was in term one, week one, Time 2 was in term two, week five, and Time 3 in term three, week nine. Rather than being aligned with the beginning and end of each term, the time points were structured this way to ensure an equal number

of weeks between them. At Time two, teachers participated in an intervention which consisted of a professional development session on how to co-construct learning goals effectively. The intervention was conducted using a double pre-test post-test design to establish whether co-constructed goals would enhance writing achievement.

Effective teacher practice is strongly associated with high student achievement (Ministry of Education, 2003), and the present research also incorporated a qualitative element, to establish participating teachers' perceptions of their own practice. These data collected at Times one and three allowed an investigation of the extent to which students' achievement reflect their teachers perceived quality of practice. To measure and monitor students' writing achievement, data were collected at all of the time points using the revised 2012 version of *e-asTTle* writing assessment tool. To investigate whether the intervention had an impact on their writing achievement, students' progress between Times one and two, was compared to progress made between Times two and three.

In the present study, it was hypothesised that co-constructed goals would accelerate students' writing achievement. However, the participating school's pre-existing interventions to overcome students' underachievement in writing could have implications for this study's results. For example, if teachers were already employing a number of effective practices then students would probably be making progress, which would make it difficult to establish the impact of the research intervention.

Globally, writing has a history of being a learning area in which students underachieve. This study seeks more formal evidence on whether writing achievement can be accelerated through the use of a pedagogical strategy involving the co-construction of learning goals. To guide this research a central question was formed: *Does a continuous co-constructed goal setting intervention accelerate students' progress in writing?* To answer this research question, two additional questions were developed—*To what extent can teachers identify*

elements of co-constructed goal setting within their own practice? As well as, *Is there a relationship between students' progress and a teacher's practice?*

Chapter 2: Methods

2.1 Implementation

2.1.1 Setting

The study was carried out in one contributing primary school in the greater Wellington region. At the time, the school had a decile rating of two and a roll of 384 students. The ethnic make-up of the school was predominately Māori (48%), with nearly equal percentages of Pasifika (25%) and NZ European/Pakeha 21% respectively. Asian, African and other ethnicities made up the remaining 6%. The school was divided into two syndicates. The junior syndicate consisted of students from new entrants to Year Three, and the senior syndicate comprised students from year four to six. Reading and numeracy achievement is comparable with other schools with similar characteristics. However, writing achievement is substantially below the national norm for students in years 1, 2 and 3, and since 2010, students in years 4, 5 and 6 has fluctuated from being below, to just beyond the national norm.

2.1.2 Participants

Teacher and student participants were selected via a willingness to be involved in the study. Initially, seven teachers were approached, and four agreed to participate in the study. The participating teachers comprised two females and two males, ranging in age from 28 to 50 years with 6 to 20 years of teaching experience. Data were collected from a sample of 86 Year Four, Five and Six students varying in age from 7 to 11 years old. Students formed four composite classes – one year 4 and 5 class, and the remaining three consisted of year 5 and 6 students. Included in this sample were 44 females (51%) and 42 males (49%); a similar ratio to the overall gender profile of the school (50/50). Table 2.1 shows the ethnic make-up of the sample which also reflected the ethnic make-up of the school population. The baseline sample included two students who received additional English language learning support and 15 students who were identified as having special learning requirements.

Table 2.1. Ethnic profiles of school and student participants

Ethnicity of participants	*NZ European/Pakeha*	*Māori*	*Pasifika*	*Other Nationality*
Sample %	24	47	25	4
School %	21	48	25	6

2.2 Instruments

2.2.1 e-asTTle Writing Tool

The *Assessment Tool for Teaching and Learning* (asTTle) is a government-owned and operated assessment system created by a team of curriculum experts. By 2003, versions of *asTTle* were available to assess the reading, mathematics and writing achievement of students in years 5-10. In 2012, the Ministry of Education published a revised edition of the writing assessment which included being an online learning and assessment tool, a simplified marking rubric, as well as a widened scope so that teachers could assess students' writing in years 1-10.

The *e-asTTle online learning and assessment tool for writing* (2012), also known as *e-asTTle writing (revised),* was chosen as a measure of writing achievement for the present study, on the basis that it is a standardised assessment tool. However, the tool had not been used by the school since 2013; instead, the school used a self-made assessment rubric based on *The Literacy Learning Progressions* and the *English in the New Zealand curriculum; English writing exemplars*. The duration of the *e-asTTle writing (revised)* test was 40 minutes and students were not allowed to use any resources or supports such as dictionaries, thesauri or other writing samples. Tests were completed in a traditional manner on paper. An *e-asTTle* writing assessment comprises 20 writing prompts that cover a range of purposes (to narrate, to recount, to explain, to persuade and to describe). For ease of marking and comparison of data, to *explain* was the purpose selected for use throughout this research (see Figure 2.2).

Table 2.2. e-asTTle explain writing prompts used in this study

Time Point	*Writing Prompt*
1	Explain what being a good friend means
2	Explain why a place within your community is special.
3	Describe one environmental problem and explain what people do to reduce its impact on the planet.

To produce an overall score, *e-asTTle writing (revised) 2012* uses the total of the rubric scores (that teachers allocate) and then converts this number into a scale score, (aWs) ranging from 745 – 1986 scale points. The scale scores are aligned with levels of *The New Zealand Curriculum*, which are then divided into three sub-levels—basic, proficient and advanced. A scale score and its corresponding curriculum level are assigned to the completed *e-asTTle* test, for example, 3A – curriculum level 3 advanced, or 2B – curriculum level 2 basic.

The *e-asTTle* marking rubric assesses seven different elements of writing – ideas, structure and language, organisation, vocabulary, sentence structure, punctuation, and spelling. Each element has its own rubric, and descriptors are provided to show what it looks like across a progression (see Appendix A). Attached to each descriptor is a category title (R1-R7), which teachers use to arrive at an overall score.

2.2.2 Teacher questionnaire

In order to measure teachers' perceptions of the effectiveness of co-constructed goal setting and their practice, a questionnaire was designed (see Appendix B). Teachers completed the questionnaire independently of each another.

The questionnaire consisted of 15 questions that focused on teachers' implementation of learning goals and success criteria, with an additional four general questions about their qualifications and experience. Five questions required a single answer, and the remaining nine allowed for participants to

choose more than one answer. The method of Likert scaling was employed for questions 6, 12, 13, 15 and 18, which enabled the researcher to measure the frequency of practice use (Barnette, 2010).

To overcome some of the limitations that come with using a questionnaire, a brief description of learning goals was provided at the beginning of the questionnaire to support teachers in identifying aspects of goal setting in their practice. Another limitation is that teachers also may not have reflected critically upon their own practice, as they may not have wanted to identify flaws or strengths. To avoid this situation, a multi-choice questionnaire was created so that it did not appear that there was only one best-looking answer. Additionally, teachers were often given the choice of selecting more than one option per question.

2.3 Procedure

A quasi-experimental longitudinal research design was used, with measures taken at each of the three time points, approximately 15 weeks apart. Time 1 was the first week of term one, Time 2 occurred 15 weeks later during term two, week five, and Time 3 during term three, week nine. Following the second time point, an intervention was implemented; with quantitative data collection occurring at Times 1, 2, and 3; qualitative data was collected at Times 1 and 3.

2.3.1 One group double pre-test-post-test design

The study used a one-group double pre-test-post-test research design. A control group could not be included in the present research design because principals of the participating schools felt uncomfortable with asking their teachers to refrain from using co-constructed learning goals. Additionally, as argued by Falaye (2009), a control group can disadvantage and deny "the benefits that participants in the treatment group would have been provided" (p. 23).

Figure 2.1 illustrates the time course of the study. O_1 and O_2 represent the two pre-tests, and O_3 represents the singular posttest (Salkind, 2010). The double pre-test allows for the measurement of maturation or normal progress between

the first and second pre-test. It can then be estimated that this progress will repeat between the second pre-test and post-test; thus any difference in the change between time points two and three, in comparison with the change between time points one and two, can be contributed to factors other than maturation (Salkind, 2010). Thus, this design partially mitigates the lack of a control group, although the influence of extraneous variables on the results cannot be entirely ruled out.

$$O_1 \quad O_2 \quad X \quad O_3$$

Figure 2.1. Diagram of research design from Salkind (2010).

2.3.2 Pre-Intervention

To provide baseline data, all participating students completed an *e-asTTle* writing test of 40 minutes in duration at Time 1. At each time point the student participants were assigned the same writing prompts, however, at each point the prompt differed to ensure any progress could not be attributed to repeated material. The prompt at Time 1 was to explain what being a good friend means, and to administer the test, teachers followed a specific procedure as stipulated in the *e-asTTle writing manual*. This procedure involves verbally delivering the instructions to support any students who find reading challenging, followed by a discussion of up to 5 minutes during which students can share ideas and teachers can ensure that all students understand what is expected of them.

At Time 2 prior to the intervention, students completed a second *e-asTTle* writing test (to explain why a place within your community is special) to estimate their progress made over the first 15-week time interval.

2.3.3 Intervention

Training for the intervention began with teachers being given a definition of 'co-constructing writing goals' so that they understood what is involved. "Co-constructing is when you the teacher, and students, either individually or collectively, participate equally in creating goals, and next learning steps, using evidence from students' current writing ability".

The final part of the training was based on the research of Graves, and of Dix and Cawkwell's (2011) study where teachers took on the role of a student so that they could experience the process from a student's perspective. In the present research, each teacher therefore took on the persona of a student, while the researcher modelled co-construction and worked with them through the process. To support this role-play and to inform a suitable goal choice, teachers selected a piece of writing that one of their students had recently completed. As there are many ways to set goals (Locke & Latham, 2002; Schunk & Swartz, 1993) a resource outlining the co-construction process used in this study was given to the four teachers so that they could refer to it during the intervention (see Appendix C).

After the professional development session, the intervention began with teachers incorporating the co-constructed goal-setting process into their daily writing programme. To begin with, teachers facilitated the process by meeting with groups of students who were achieving at similar levels. They began the goal-setting process by comparing students' most recent piece of writing with an example of higher quality to identify traits that they (individually) needed to improve for example, word choice, punctuation or adding more detail. If students in the group identified similar traits they worked together under teacher supervision to form their goal, otherwise, the individual student with support from the teacher formed a goal based on the trait they identified as needing improvement.

If students were capable, the next part of the process was to identify success criteria, also known as steps or clues, which help students in attaining their goals. Even with teacher support, some students find this part of the process challenging, and often it is beneficial to the student if success criteria are provided by the teacher.

Once the goal was formed, students either wrote or placed a typed version of their goal and success criteria into their writing books; this ensured that students were exposed to their goal every time they wrote. Teachers then used a

piece of a writing to model to students what their goal looked like, and often modelled to a group of students who had similar goals, or where necessary, modelled to individual students. Students were then encouraged to perform similar actions to the teacher, and incorporate their goals into their writing.

When students showed evidence in their writing that they were using their goal consistently and correctly, the goal-setting process occurred for the second time. Throughout the Time 2-3 interval, this process occurred as often as each student needed until the end of the intervention at Time 3.

Teacher participants were provided with on-going moral support through email communication, as well as informal meetings with each of them separately approximately every fortnight. One teacher did not feel confident with implementing the intervention (despite the questionnaire indicating that they already used co-constructed goals) and asked for further support to be provided. Over two one-hour sessions, the researcher worked with this teacher's class and modelled how to set goals alongside the students. After observing the goal-setting process, the teacher stated that he felt confident in repeating it.

2.3.4 Post Intervention

At the end of Time three students sat a final *e-asTTle* writing test that prompted them to 'describe one environmental problem and explain what people do to reduce its impact on the planet'. Students had identical prompts and were allocated 40 minutes to complete the test. These final writing tests, in conjunction with the teacher questionnaire, were used to determine whether or not students' co-construction of their learning goals had an effect on their writing progress.

2.4 Data Analysis

2.4.1 Quantitative data analysis

As the main analysis was of progress between time points, only the data of students who had participated at all three time points were included. The *e-asTTle (revised)* writing data were analysed using calibrated measurement scale locations. To measure students' ordinary writing progress (the normal progress

expected in one-and-a-half school terms), the scale location at Time 1 was subtracted from the scale location at Time 2. A similar process was followed to calculate students' writing progress under the intervention (Time 3 asTTle – Time 2 asTTle). A *t*-test was used to test the significance of the difference between the two sets of progress data, and therefore to establish if the intervention had a significant impact on students' writing achievement.

Analyses of variance (ANOVA) is a statistical method used to test differences between two or more means. In the present study, ANOVA was used to investigate differences in the impact of the intervention on students of different ethnicities and genders. The variables for the first analysis of data were: time (progress made over the period of the study, and gender (male and female). ANOVA was used to see if students made progress over the period of the study and if the interaction between time and gender differed for male and female students. The variables for the second analysis were: time, and ethnicity (Māori, European, Pasifika, and other nationality). This ANOVA was used to see if the interaction between time and ethnicity differed for ethnicity Māori, NZ European, Pasifika, and other nationality.

2.4.2 Qualitative data analysis

Teachers' answers to the questionnaire were recorded in a spreadsheet to identify their practices prior to the intervention, and to establish possible changes in practices occurring after the intervention.

2.5 Ethical considerations

This study was granted ethical approval by the Victoria University of Wellington Human Ethics Committee on the 10 April 2015 and complied with the university's Human Ethics Policy and Guidelines.

Teacher participants, as well as the Principal, were given information sheets with the relevant details of the proposed study. Following this, the researcher held a brief discussion with the teachers and Principal about the study,

during which an opportunity was provided for any questions to be answered. Consent forms were also distributed to both parties.

While confidentiality could be guaranteed, anonymity during the study could not. For quantitative measures, the students' data had to be tracked, and the teachers' questionnaire responses had to be identifiable so that an analysis relating their responses to their students' writing could be conducted. Teachers and the Principal were informed that their names, their students' names and the school's name would remain anonymous and that pseudonyms would be used throughout the written report.

An ethical concern for this study was a potential conflict between the researcher's role as a teacher in the participating school. This was of particular concern for the process of marking the *e-asTTle* writing samples, which were the only method of data collection measuring students' achievement. To mitigate this, all *e-asTTle* writing samples over the three time points were moderated by colleagues. The moderation process was a process whereby a colleague re-marked a writing sample to check on the reliability of the initial score. This process also checked that marking was consistent and in alignment with the *e-asTTle* marking guide (Ministry of Education, 2012).

Since the researcher was a colleague to the teacher participants, it was important to show sensitivity towards the information they supplied in the questionnaire (Mutch, 2013), and to assure them that the questionnaires would only be accessed by the supervisors and researcher and that they would remain confidential. Furthermore, during the recruitment stage of the study the researcher reinforced the point that participation was voluntary, and that teacher participants were not pressured to be involved if they were not comfortable. This resulted in two teachers choosing to not participate.

Chapter 3: Results

3.1 Quantitative Data

Using the students' *e-asTTle* scores from Times 1, 2, and 3, a number of analyses were performed to identify whether the co-constructed goal-setting intervention had an impact on students writing achievement.

Figure 3.1 demonstrates that students made the same amount of progress in their writing achievement after the intervention as they did before the intervention. A paired-samples *t*-test was conducted to compare progress made in the *e-asTTle* writing test between Times 1 and 2, with progress made between Times 2 and 3. The *t*-test showed that there was no significant difference in progress made in each of these intervals; $t<1$, $p=0.62$.

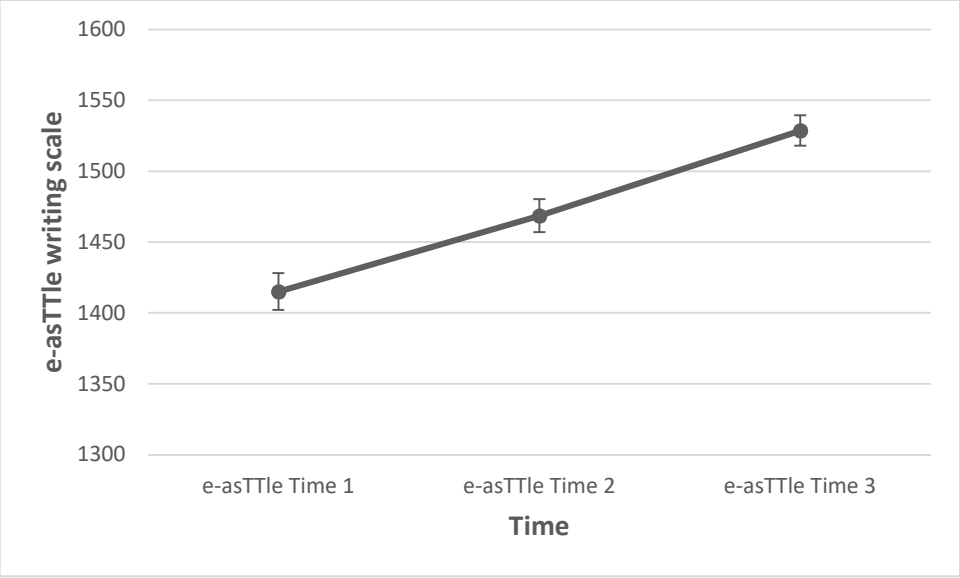

Figure 3.1. Means of e-asTTle writing achievement for all students across three time points. Error bars represent the standard error of the mean.

Discussions with teachers and the management team at the participating school revealed that before the intervention teachers were already employing a number of effective teaching practices such as those mentioned in *Chapter Four*, and that some teachers were already setting goals with their students in an effort to raise achievement levels. It is possible therefore, that the intervention had a minimal impact because it had effectively already been at least partially

implemented, and as a result, students' writing achievement had improved. This possibility is supported by the school's National Standards writing data. Table 3.1 shows the achievement data from 2014 in comparison to overall nationwide National Standards data. The data shows that in 2014 the school was in alignment with national data, and already had a substantially high proportion of students achieving at or above the National Standard for writing in the year prior to the commencement of the study.

Table 3.1. Comparison of the percentage of students at or above the National Standard in writing, 2014

	Year 4	*Year 5*	*Year 6*
Study School	72.0	68.0	70.0
Nationwide	73.1	68.7	71.8

Source: Ministry of Education, accessed 27th April 2016.

While the students combined *e-asTTle* achievement data in Figure 3.1 showed that, statistically, there was no significant difference in progress before and after the intervention, an analysis of individual classes showed an interesting pattern regarding Mr J's[1] class. At Time 1, the average *e-asTTle* score of students in Mr J's class was significantly lower than students in other classes. Additionally, as shown in Figure 3.2, progress made in his class between Times 1 and 2 was also significantly less than progress made by students in the other three classrooms.

However, writing achievement in Mr J's class increased significantly between Times 2 and 3. A paired-samples *t*-test showed that students in Mr J's class experienced significantly more progress in their *e-asTTle* score after the intervention; $t\,(13) = 2.44$, $p=.03$, than in the interval before it. Figure 3.3 illustrates the relative progress in writing achievement before and following the intervention.

[1] Pseudonym used for confidentiality.

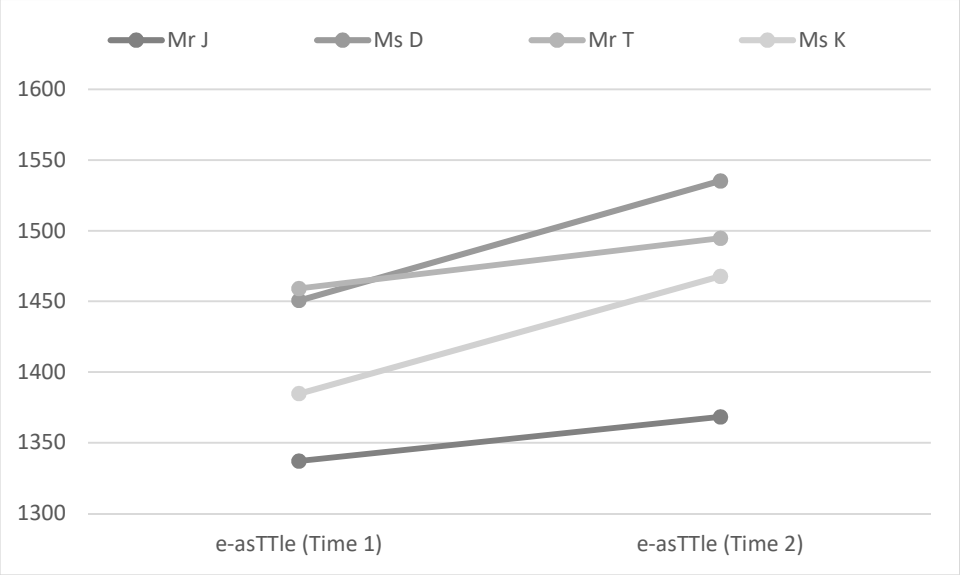

Figure 3.2. Means of e-asTTle writing achievement for teacher participants across two time points.

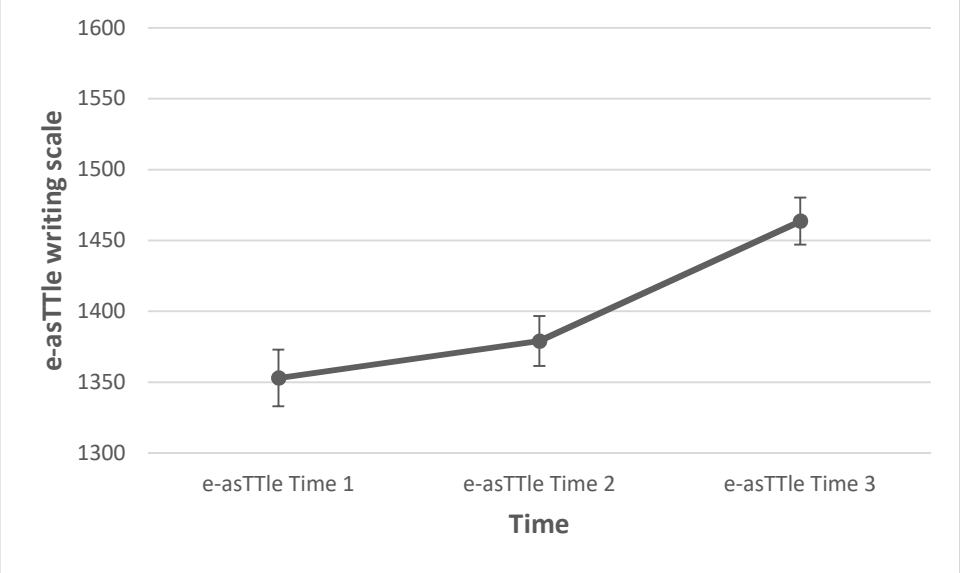

Figure 3.3. Means of e-asTTle writing achievement for Room Two[1] across three time points. Error bars represent the standard error of the mean.

Based on observational evidence, the relatively poor achievement data at Times 1 and 2 can be attributed to ineffective teaching practice. Some effective practices such as modelling and goal setting were being employed, but not correctly. An example was the use of goal setting; goals were not individualised for students or for small groups, and instead, the whole class shared the same goal and this goal was prescribed by the teacher. Research by Edwards (2013), Jan

O'Neill (2004) and Wolters et al. (1996) suggests that goals need to be based on students' individual needs or at least a small group's collective needs, and not prescribed by the teacher, because students find it difficult to connect with a teacher-directed goal or to feel motivated to attain it.

The students improved writing achievement can probably be attributed to changes in Mr J's practice during the intervention. I supported him by working with his students over two sessions to demonstrate to him how to set goals effectively. The students and I identified what writing aspect they individually needed to improve on, and we then wrote this as a goal in the students' writing books to refer to every day. During this time Mr J observed the process and roamed around the room to support his students. The students continued to work on these goals for a few weeks or until they had achieved them, and then went through the process of setting a new goal, facilitated by Mr J.

The separate and joint effects of time and gender on *e-asTTle* writing scores were explored with a two-way analysis of variance (ANOVA). The analysis had time (three points) as a within-subjects factor, and gender as a between-subjects factor. The analysis demonstrated a significant main effect of time; $F(1, 58) = 57.91$, $p<.001$; there was also a significant main effect of gender; $F(1, 58) = 3.79$, $p = .056$, in which female students averagely performed more strongly than male students, and a significant interaction between the two variables; $F(1, 58) = 3.79$, $p = .056$, indicating that while progress in writing was similar in the pre-intervention phase (i.e., between Times 1 and 2), progress between the two genders differed after the intervention (between Times 2 and 3). Figure 3.4 demonstrates that in comparison to female students, male students experienced a much greater increase in their *e-asTTle* writing score after the intervention, with the mean scale location for male and female students very similar by Time 3.

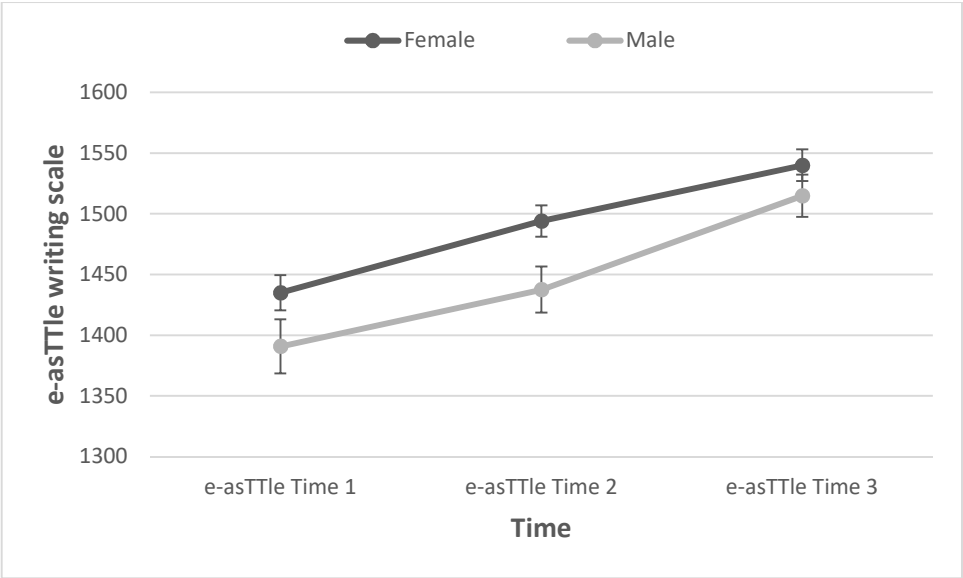

Figure 3.4 Means of e-asTTle writing achievement disaggregated by time and gender. Error bars represent the standard error of the mean.

A further two-way analysis of variance was performed and included time and ethnicity as factors. It showed that the main effect of time was significant; $F(1, 55) = 45.38$, $p<.001$; but as illustrated in Figure 3.5, the main effect of ethnicity was not significant; $F(2, 55) = 1.37$, $p = 0.26$, and neither was there a significant interaction between time and ethnicity; $F(2, 55) = 1.09$, $p = 0.34$.

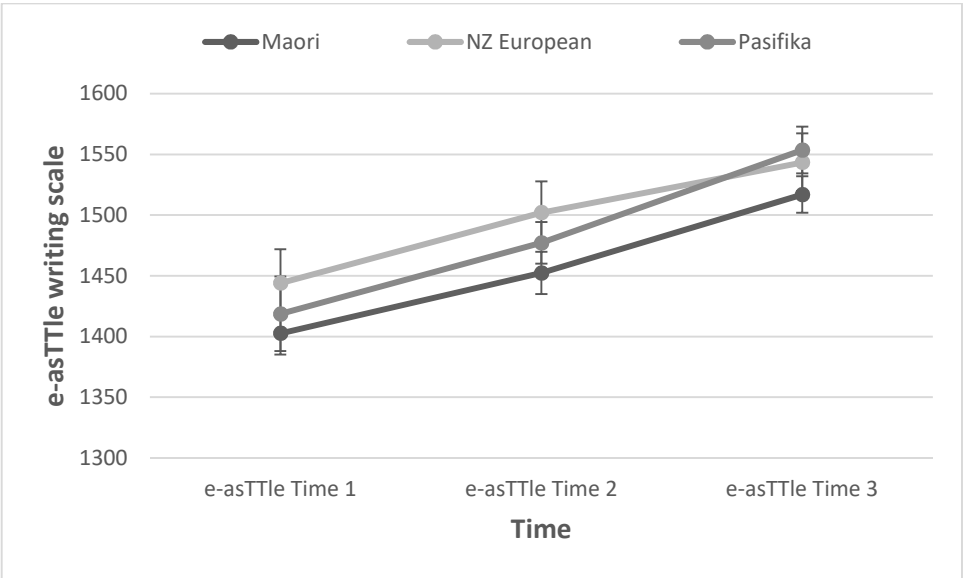

Figure 3.5. Means of e-asTTle writing achievement disaggregated by time and ethnicity. Error bars represent the standard error of the mean.

3.2 Qualitative Data

The questionnaires completed by the teacher participants at time points one and three provide some insight into their practice throughout the study. The following provides a brief outline of the data, and a more in more depth discussion can be found in *Chapter Four*. Table 3.2 provides gender, ethnicity, experience, and classroom level information about the participating teachers.

Table 3.2. Overview of teacher participants

Teacher	***Gender***	***Ethnicity***	***Amount of experience (years)***	***Classroom level***
Mr J	M	Māori	20	Year 4 & 5
Ms D	F	NZ European	6	Year 5 & 6
Mr T	M	Māori	24	Year 5 & 6
Ms K	F	Samoan	16	Year 5 & 6

3.2.1 Mr J

Mr J's questionnaire completed at Time one showed that he was using a range of teaching strategies in his classroom, such as modelling, feedback, and peer feedback. He also said that he *usually* used learning goals to support students' writing and that the goals were individualised for each student or based on a group's collective needs.

According to the questionnaire completed at Time three, the only change that Mr J had made to his practice as a result of the intervention, was a slight increase in the focus of the students' learning goals. Before the intervention his students' goals focused on language features only; after the intervention they focused on language features and writing structure. The other change to Mr J's practice was that after the intervention, he said that he was sharing students' goals verbally, through modelling and by writing them in their books, whereas prior to the intervention he reported sharing goals only verbally.

3.2.2 Ms D

This teacher had the least teaching experience of all the participants but reported the most change in her practice after the intervention. Prior to the intervention Ms D reported using a range of teaching strategies (feedback, modelling etc.), with learning goals *always* used to support students during lessons and independent writing. Her use of learning goals was mostly teacher prescribed and were based on what she perceived to be the collective needs of the group.

After the intervention, Ms D reported that students were involved in setting their own goals, that they were individualised for each student, and that students were giving feedback to their peers. Over the course of the study this teacher's practice changed from being teacher directed, to a collaborative approach.

3.2.3 Mr T

Of all the teachers, Mr T was the most experienced, having spent 22 years of a 24-year career teaching Year 5 and 6 students. The questionnaire completed at Time one showed that he was using a range of teaching practices and that students' learning goals were sometimes individualised and sometimes collective. Mr T reported that students were already involved in the goal-setting process and working alongside the teacher. However, at Time one the teacher was sharing goals with students only once a term.

There was little change in Mr T's answers to the questionnaire at Time three; however, he did report increasing the frequency of sharing the students' learning goals to several times a week. Studies by researchers such as Alton-Lee et al. (2012) and Ames (1992) have shown that goals are more effective when they are referred to throughout lessons and when they are shared with students frequently.

3.2.4 Ms K

Ms K gave identical responses to the questionnaire at both Times one and three. She reported using a range of effective teaching practices, and that students were involved in setting their writing goals throughout the study. This teacher also

used goals frequently to support students during writing lessons and co-operative learning was evident as students supported their peers by giving them feedback on their writing goals.

3.3 Summary

The results from the questionnaires indicated that all of the teachers in this study were employing a range of effective teaching practices, such as goal setting, prior to the intervention. However, for one teacher, the findings from the questionnaire and observational data, did not align with the quantitative data. This could be due to the participant providing ideal answers, or misinterpreting what goal setting and effective teaching looks like. The following chapter discusses this in more detail.

Chapter 4: Discussion and Conclusions

4.1 Overview of the research

The primary aim of the present research was to examine whether a co-constructed goal-setting intervention could accelerate students' writing achievement. While the findings did not provide evidence that co-constructed goals accelerate the achievement of all students, there was evidence that they can accelerate the writing achievement of lower-achieving students. As a result of implementing the intervention, male students, as well as one class of students, made more progress with their writing achievement, than they had in an equivalent period before it.

A secondary aim of the research was to examine the extent to which teachers can identify elements of co-constructed goal setting in their own practice. The qualitative data from the current study illustrated that most teachers were able to reflect on their practice, and correctly identify elements of co-construction that they were employing, for example, goals based on individual student's needs. However, one teacher's data did not align with his practice; he reported that goals were being set with the students when observation indicated that in fact they were being assigned by the teacher.

A third aim was to investigate any relationship between students' progress and their teachers' employment of specific teaching practices, and the extent to which elements of co-construction were employed. When teachers employed practices such as modelling, co-constructed goals, and feedback, students made continuous progress over the year. However, data from one teacher showed that, when practices were not being employed effectively, students made less progress than their peers who were with more effective teachers. However, when the teacher employed these practices more effectively, progress improved substantially.

4.2 Goal setting intervention effects

4.2.1 Overall effectiveness

One factor that might have interfered with any accelerative effect of co-construction was the previously established school-wide intervention to raise students' achievement in writing. An analysis of the 2009 data from the study school showed consistent underachievement in writing, particularly of students in Year Three, and of male students in general (see Tables 1.1 and 1.2). The school intervention was implemented in 2012 and was based on recommendations made by researchers Alton-Lee et al. (2012), Hattie (2008), and the Ministry of Education (2003). They recommended that a focus on effective teacher practices such as modelling, feedback and student-teacher relationships can improve achievement. The school's prior intervention had an immediate impact; some students experienced a rapid and substantial improvement in their writing achievement. The improvement was evident in a comparison of the 2013 and 2014 percentages of students in Years 4, 5, and 6 achieving at or above the National Standard in writing. In Year Four the percentage moved from 61 to 72, Year Five it moved from 46 to 68, and Year Six, from 59 to 70. Additionally, in 2014, two years after the implementation of the intervention, achievement at the study school was notably higher than at schools with similar characteristics (see Table 3.1). As a result of the intervention, students' achievement was already being supported by improved use of practices such as modelling and goal setting. Consequently, there may have been little room for further improvement; this provides a plausible reason that the intervention of the present study apparently had little effect on writing achievement.

Another potentially impeding factor on the present study's findings was that prior to the commencement of the goal-setting intervention, a majority of students were already highly motivated. One of the main benefits attributed to co-constructed goal-setting was its elicitation of motivation in students, and as a result, goals are likely to be attained and achievement levels improved (Cheung, 2004; Edwards, 2013, Sarwar et al., 2012; Schunk & Swartz, 1993). However, goal setting was already a regular practice for three of the teacher participants, and

their students showed signs of already being highly motivated, with a high proportion achieving at or above the National Standard for writing. Additionally, the quantitative data indicate that the students of these three teachers were already achieving well with their writing before the intervention was implemented. The notion that goal setting can elicit high motivation and achievement levels is a recurring theme throughout literature such as Jan O'Neill (2004), and Wolters et al. (1996). Thus, the already highly motivated students were unlikely to see a significant gain from the intervention, contributing to the overall apparent ineffectiveness.

4.2.2 Effectiveness for three of the teacher participants

Teacher Participant: Ms D

During the Time 1-2 interval Ms D employed a range of practices such as modelling and goal setting. Goal setting was a prominent feature of her writing programme, however, Ms D was not using the method of co-construction. Goals were assigned to the students and were used daily to support them while writing. The quantitative data collected during this interval, as seen in Figure 3.2, demonstrated that students in Ms D's class were achieving at a high level and that they made good progress with their writing achievement. The progress made by the students could possibly be attributed to the practices Ms D employed during this interval, and potentially indicate that she was implementing them effectively. This notion is in alignment with research by Alton-Lee et al. (2012) and Hattie (2008) who found a strong relationship between the effective employment of certain practices, and students with high achievement levels.

Qualitative and observational data indicated that Ms D implemented the intervention; during which goals were co-constructed with students throughout the Time 2-3 interval. Despite implementing the intervention, the quantitative data showed that her students' progress was similar to progress made prior to the intervention. This could probably be attributed to the fact that her students had made good progress between the Time 1-2 interval; therefore, the intervention had little effect as the students were achieving near to their potential by Time 2.

Teacher participant: Mr T

Mr T was already co-constructing learning goals with his students prior to the intervention; however, the process of co-constructed goal setting only occurred once during the Time 1-2 interval, and ideally it should occur numerous times. In collaboration with goal setting, Mr T also used modelling and feedback to support his students with their writing achievement. The quantitative data at Time 1 illustrated that his students' achievement was similar to those in Ms D's class, and by Time 2 they had made some progress.

Qualitative evidence showed that during the intervention Mr T continued to co-construct goals and that the only change to his practice was an increase in the frequency of the goals being shared with the students. While this was the only change, sharing goals frequently can make a significant difference to students' writing achievement (Alton-Lee et al., 2012; Ames, 1992). Similar to Ms D, Mr T's quantitative data showed that the progress his students made during the intervention phase (Time 2-3), was similar to their progress prior to the intervention; thus, it did not accelerate his students' writing achievement. It is difficult to identify precisely why the intervention was not successful for Mr T, especially as he did implement co-constructed goal setting more thoroughly during the intervention phase. The results could be attributed to the fact that his questionnaire answers did not accurately reflect his actual practice, or to that fact that his students were already achieving at a high level.

Teacher participant: Ms K

Observational evidence and qualitative data demonstrated that Ms K was implementing co-constructed goal setting prior to the intervention, as well as, during the intervention. Goals were shared daily with the students, and new goals were set as soon as they were attained. As a result of this prior use, the intervention had little effect on her students' writing achievement. However, Ms K's students made consistently good progress over the duration of this study, which could potentially be attributed to her use of co-constructed goal setting during both of the time intervals.

4.2.3 Facilitating the goal-setting process for low-achievers

Locke's goal setting theory has been influential in educational contexts since the 1980s, informing strategies to improve students' engagement and achievement (Cheung, 2004; Martin et al., 2014). Research by Biemiller and Meichenbaum (1992) identified that high-achieving students naturally exhibit goal-setting qualities and generally display higher levels of motivation. They argued that these two characteristics (goal setting and motivation) were the key differences between a high-achieving and a low-achieving student. The goal-setting process can be quite challenging for low-achievers as it requires many sophisticated skills such as identifying aspects of learning that require improvement, and understanding of what is required to improve these aspects. However, goal setting has been implicated in raising achievement (for example, Locke & Latham, 2002; Palmer & Wehmeyer, 2003; Schunk & Swartz, 1993); therefore, it is essential that teachers facilitate the goal-setting process for low-achieving students, so as to maximise the benefit to them.

4.2.4 Effectiveness for low-achieving students

After disaggregating the quantitative data collected prior to the intervention (Times 1 and 2), it became apparent that Mr J's students were consistently achieving at a lower level than their peers in other classrooms (see Figure 3.2). For this group, the co-constructed goal-setting intervention had a significant positive effect on their writing achievement; they made significantly more progress after the intervention than in an equivalent period before it.

Additionally, male students in the sample showed on average, lower achievement in writing than their female counterparts (see Figure 3.4). This is in alignment with nationwide writing achievement data in New Zealand, as well as data from the study school (see Table 1.2 and Figure 1.1). An analysis of the quantitative data disaggregated by gender illustrated that between Times 1 and 2, female and male students made a similar amount of progress. This analysis also showed that after the implementation of the intervention, female students made a similar amount of progress between Times 2-3, as they did between Times 1-2. Whereas, in comparison, the data revealed that male students benefited from the

intervention; they made significantly more progress after its implementation, than they did prior to it. As a result of this co-constructed goal-setting intervention, the writing achievement gap between female and male student participants was minimised.

4.2.5 Social development theory and low-achievers

We can possibly attribute the success of the intervention for relatively low-achieving students to knowledge and skills being made more accessible when students work alongside their teachers. Vygotsky's social constructivist theory suggests that cognitive development largely occurs when students interact with peers and adults. When students work alongside a knowledgeable person they are able to master skills that they wouldn't be able to access when working independently. This is also known as working within the Zone of Proximal Development. Goal setting is a complex task and when left to their own devices, students may set unrealistic or irrelevant goals (Elliot & Dweck, 1988; Locke, 1996; Schunk, 1985). However, when goals are co-constructed this enables students to develop a thorough understanding of the goal-setting process, as well as, contribute to the formation of their own learning goals. Active participation elicits motivation and self-efficacy, because of which students are more likely to attain their goals (Edwards, 2013; Hattie, 2013). Therefore, when a teaching strategy such as goal setting incorporates elements of Vygotsky's social development theory such as co-constructing goals, low-achieving students can experience more success.

4.2.6 Mr J's class

In relation to the effectiveness of the intervention for Mr J's low-achieving students, we can attribute this accelerated progress to an improved use of co-constructed goal setting. Qualitative data collected prior to the intervention indicated that Mr J was employing the practice of goal setting, however, classroom observations showed that it was not implemented effectively. Mr J's answers highlight a weakness in questionnaire data; Johnson & Christensen (2012) suggest that in responding to questionnaires, participants sometimes provide 'ideal' answers, ones that they think a researcher wants to receive. Additionally,

quantitative data, as illustrated in Figure 3.2, showed that the students in this class made less progress between Time 1 and 2. Whereas most participating teachers involved students in goal setting, in Mr J's class, goals were created by the teacher and given to the students with little explanation of their relevance. Zimmerman's (2008) research synthesis found that when goals were assigned to students they did not develop a sense of efficacy and did not attain the goal; whereas, when students played a role in setting their goal, they were more likely to achieve it. To support Mr J with implementing the intervention effectively, the co-constructed goal-setting process was modelled to him at Time 2, in which the researcher co-constructed with his students. The significant acceleration of his students' progress in the intervention phase of the research indicates that this modelling had a positive impact on Mr J's practice.

Despite Mr J's class making significantly more progress during the intervention than before it, at the final data collection point, the average score of the students in this class remained lower than all of the sample average. A potential reason for this could be attributed to an ineffective employment of strategies other than goal setting, such as modelling and formative feedback (Black & Wiliam, 1998). As mentioned earlier, Mr J's qualitative data illustrated that goals were being used frequently, however, classroom observations revealed they were not being employed effectively. Therefore, the possibility arises for this to occur with other strategies.

The other three teacher participants indicated on their questionnaires that they used formative feedback, success criteria, modelling, and peer feedback throughout the year, and classroom observations confirmed this. Additionally, their students made consistent progress and their achievement data was at a higher level than Mr J's, indicating that potentially the other teacher participants were implementing these practices more effectively. In support of this, educational research literature used in this thesis such as that of Hattie (2008), Jan O'Neill (2004) and Schunk & Swartz (1993) recognises that a teacher's practice can have a profound impact on the success of low-achieving students.

4.2.7 Impact of interventions on gender achievement

Intervention-based goal-setting research has consistently found no difference in the effectiveness of an intervention for male and female students. For example, Schunk and Swartz (1993) compared the effects of product and process goals on students' writing achievement. Product goals focus on an end result such as a score, and process goals focus on mastering skills such as using adjectives correctly in a sentence. Students in Schunk and Swartz's study were randomly assigned to one of four experimental conditions, and results showed that there was no significant difference in the effect of the intervention on male and female achievement within either of the four groups. Furthermore, meta-analyses such as Hattie's (1992, 2008) did not evince that goal setting is more effective for one gender or the other, but rather indicated benefits for both genders.

In contrast, the results of the present study showed that while male students were achieving substantially lower than female students prior to the intervention, on average, they made significantly more progress than female students after its implementation. It is difficult to determine precisely why the results of this study differ from others in this regard, but it is likely to be attributable to the co-constructive nature of the goal-setting process used in the present intervention. A factor that appears to affect male students writing achievement is their lack of motivation to write; which co-constructed goal setting elicits in students (Smith and Elley, 1997). The intervention in Schunk and Swartz's (1993) study did not include co-construction of either process or product goals; rather, the goals were assigned by the two expert teachers to the students. Even though Schunk and Swartz found that students in the process goal groups experienced significantly more improvement than students in the product goal groups, research syntheses by Dyson and Freedman (2003) and Wang et al. (1993) suggest that the intervention could have had more of an impact if students had taken part in the goal-setting process. This is the key difference in the present study's intervention.

4.2.8 Ethnic achievement

When comparing progress made between Times 1 and 2, with progress made between Times 2 and 3, the results showed that there was no significant difference between the three ethnic groups – New Zealand European, Māori and Pasifika. All three ethnic groups made a similar amount of progress before and after the intervention (see Figure 3.5). These results indicate that students of all ethnicities in the study school experienced a similar amount of success with their writing achievement; there was not a single ethnic group that achieved at a higher or lower level.

These results are interesting as they show that there is no disparity in the achievement of the different ethnic groups. These results are in contrast to findings by the Ministry of Education who identified that in general, Māori and Pasifika students underachieve in comparison to New Zealand European students (Chapple, Jefferies, & Walker, 1997). The findings of the present study suggest that the achievement gap between the different ethnicities is perhaps not a cultural problem but rather a socio-economic one. The socio-economic status of the student participants was similar, and could have contributed to their matching achievement levels.

4.3 Recommendations for future research

The findings of the present study suggest that further research into the effects of co-constructed goals is required. In particular, considering the study school's prior high achievement data, it would be beneficial to implement co-constructed goals in a school with lower achievement, and which doesn't already use this method of goal setting. This would enable a researcher to identify whether co-constructed goal setting alone can improve students' writing achievement and additionally, identify the extent to which this practice improves achievement for lower-achieving students. It would be valuable to include schools with varying characteristics (decile, type, size) to provide insight into the extent to which co-constructed goal setting is a universally effective practice. Undeniably, a control group would also improve the validity of the results. It would also be better if the

researcher did not participate in the research and rather worked with classes taught by other teachers. This would enable the researcher to work with each of the experimental groups to ensure the co-constructed intervention was being implemented correctly, thus limiting the effects of confounding variables.

As past research and meta-analyses have shown (for example, Dix and Cawkwell, 2011; Graves, 1983; Hattie, 1992; Ministry of Education, 1992), effective teacher practices are necessary for students to achieve to their potential. Therefore, further research that investigates the impact of specific practices such as modelling and feedback would add to the subject knowledge. It would also be of interest to conduct a study including a number of experimental groups with varying conditions to compare the effects of different pedagogical practices on students' writing achievement.

4.4 Conclusions and recommendations for teachers

Despite evidence from the data that the intervention was not entirely successful, it did show that goal setting was an effective practice for supporting students in making progress with their writing achievement. Three of the four teacher participants were employing the practice of co-constructed goal setting prior to the commencement of the study, and the benefit of this could be seen in their students' achievement data which improved consistently over the course of the study.

However, the qualitative data also identified three teachers as using goal setting alongside a number of other effective practices such as modelling and feedback. Therefore, a recommendation arising from this study is that when working to improve the outcomes of students' writing achievement, teachers need to use a range of effective practices, for example, goal setting, modelling, and feedback, and develop their understanding of each practice to ensure they are implemented correctly. The findings of the present study and those of other studies (for example, Dix & Cawkwell, 2011; Tienken & Achilles, 2003) indicate that an effective way to improve a teacher's practice is by providing intervention-based professional development in which an expert works closely with a teacher. The

qualitative data and empirical evidence indicate that some teachers are unable to identify aspects of their practice accurately, which could be due to a lack of understanding of what a particular effective practice involves. Participation in professional development run by experts enables teachers to develop a better understanding of what an effective practice entails, and how it should be implemented.

While the present study's professional development intervention was not successful for all students, it was instrumental in accelerating the writing achievement of the lower-achieving students. For Mr J, the professional development intervention was fundamental in refining his understanding of how to implement co-constructed goal setting effectively. Prior to this study, he was not implementing the practice effectively, and this was reflected in the low achievement of his students. However, once he participated in the intervention, his students' writing achievement accelerated. Additionally, male students were also identified as low-achieving. While their teachers were mostly already using co-constructed goal setting, the intervention provided them with a refresher on how to implement this practice effectively, and resultantly, the writing achievement of male students in general, also improved significantly.

The motivation for this study was to mitigate underachievement in writing which has been an issue in a global and national context since the early 1980's. The findings provide evidence that when implemented correctly, goal setting is an effective practice to support students' learning. Additionally, the co-construction of goals was instrumental in raising the writing achievement of low-achieving students.

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Appendices

Appendix A: e-asTTle writing (revised) marking rubric, from Ministry of Education (2012).

e-asTTle writing marking rubric

Note

The e-asTTle writing rubric is supported by a set of generic exemplars as well as smaller sets of exemplars specific to each prompt.
The generic exemplars can be downloaded from the 'Enter Scores' page under 'Mark Test'.

Ideas

Skill focus: the relevance, quantity, quality, selection and elaboration of ideas for the topic

Definition

- **Quality of ideas**
  Simple ideas are related to the personal, immediate world of the writer (concrete, predictable, familiar, personal and/or close to writer's experience).
  Complex ideas may involve generalisation, abstraction and reflection on the wider world and groups of people.
- **Selection of ideas**
  The deliberate choice of relevant ideas or subject matter to engage and influence the reader.
- **Elaboration of ideas**
  Elaboration should be relevant and may be given by providing background information or factual detail, describing, explaining, providing evidence, analysing, or evaluating.

Category	R1	R2	R3	R4	R5	R6
Descriptor	**Ideas are unrelated to the topic** **OR** **One brief, simple idea related to the topic**	**Text has a few simple, unelaborated ideas related to the topic**	**Text has many simple, unelaborated ideas related to the topic** **OR** **An idea is related to the topic and has some basic elaboration**	**Ideas are relevant and begin to show some complexity** **AND** • **Text has one elaborated idea** **OR** • **Text has several ideas that have some elaboration**	**Ideas are complex and elaborated**	**Ideas show insight, originality and some authority and/or reflection on the wider world** **Ideas are deliberately selected, effective and elaborated**
Notes		One idea may be repeated	Ideas may be disconnected or brief points in a list Some evidence of a main idea (e.g., persuasive text may take a position)		Elaboration may lack depth and detail Complexity may not be controlled Main idea/theme is present but focus may not be sustained	Elaboration is detailed Complex issues or themes are raised Main idea is focused
Generic exemplars	• S n • The girl	• I be kin • Fealing seaweed	• The Erfeh • The adventerous dog	• Margin for era • When I	• Evolving life pattern • Heavy-booted feet	• Plastic bags • Don't move

Structure and language

Skill focus: the presence and development of structural and language features appropriate to the specified purpose

Definition

- **Structural features**

  The component parts that are typically associated with a text written for a particular purpose. For example, when narrating, structural features may include an orientation to the context (place, time and participants), a series of events/actions, a problem or complication, and a resolution.

- **Language features**

  The language patterns that are typically associated with a text written for a particular purpose. These include selection of tense, tone, text connectives and vocabulary. For example, when narrating, typical language features include use of past tense, connectives denoting time (in order to provide a clear sequence of events), expressive and/or descriptive vocabulary, and dialogue.

Category	R1	R2	R3	R4	R5	R6
Descriptor	**Structural features and language features are inappropriate for purpose or absent**	**Some structural features are appropriate to purpose** **AND/OR** **Some language features are appropriate to purpose**	**Some structural features are appropriate to purpose** **AND** **Language features are mostly appropriate to purpose**	**Structural features are appropriate to purpose and some show development (may be one well-developed element with others less developed)** **AND** **Language features are appropriate to purpose**	**Structural features are appropriate to purpose and are developed and mostly controlled** **AND** **Language features are appropriate to purpose and mostly controlled**	**Structural features and language features are appropriate to purpose, controlled and effective**
Notes	See 'Structure and Language Notes' for each prompt for guidance on appropriate structural and language features.					
Generic exemplars	• The girl • The adventerous dog	• Yea I'm agree • By the mall	• The Erfeh • My iPod	• Rainbow's end • When I	• Plastic bags • Youth gym	• Don't move • And the All Blacks scored!

Organisation

Skill focus: the organisation of ideas into a coherent text

Definition

- **Coherence**

  The way ideas are linked to each other and to the broader context of the writing and/or the wider world, to produce a text that is meaningful to the reader. When the text is coherent, the relationships between ideas are clear and the writing 'flows'. When assessing a text's coherence, look for clear text connectives, consistency of verb tense, and accuracy of referring words (e.g., pronouns) across the text as a whole.

  NOTE: The focus is on the text as a whole, rather than on individual sentences.

Category	R1	R2	R3	R4	R5	R6	R7
Descriptor	**Ideas are disconnected and/or random** **OR** **Text lacks coherence**	**Text attempts to group and sequence ideas** **Text has some coherence**	**Ideas are grouped and sequenced, and text generally flows** **Text may be brief but coherent**	**Text shows control over grouping and sequencing of ideas but paragraphs are not used or are indicated incorrectly** **Text is coherent**	**Ideas are organised into basic paragraphs**	**Paragraphs support the development of the text**	**Paragraphs are deliberately structured to direct the reader** **Ideas are linked effectively within and across paragraphs**
Notes	May be a very short text	Some ideas are grouped spatially, temporally or logically May have random or visual breaks (breaks do not support reader meaning) Text contains like ideas	Errors in or absence of linking words or inconsistencies in tense across text may interrupt flow	Errors in or absence of linking words or inconsistencies in tense across text do not interrupt flow	Paragraphs have minimal development (e.g., one sentence), or some paragraph breaks are not indicated Some paragraphs may be out of sequence May be a minor glitch in flow that does not interfere with meaning	Subheadings, topic sentences and linking words are present and appropriate	
Generic exemplars	• S n • I be kin	• The Erfeh • By the mall	• The adventerous dog • My iPod	• Plastic bags • Rainbow's end	• Think about • A library	• Evolving life pattern • And the All Blacks scored!	• Don't move • I personally believe

Vocabulary

Skill focus: the range, precision and effectiveness of word choices appropriate to the topic

Definition

- **Simple everyday words:** words that are related to the personal world of the writer; words that are used frequently
- **Precise words:** words that are descriptive, expressive, academic, technical or abstract

Category	R1	R2	R3	R4	R5	R6
Descriptor	**Uses a small range of simple, everyday words and phrases from personal vocabulary**	**Uses a range of simple, everyday words and phrases from personal vocabulary**	**Uses a range of everyday words and phrases, with a small number of precise words to add detail**	**Uses a variety of precise words and phrases to add information and/or interest**	**Selects words and phrases to enhance meaning and/or mood**	**Precise language choices consistently enhance meaning and/or mood**
Notes			May use adjectives, adverbs and/or precise verbs to add interest and detail May use simple idioms or figures of speech	May use idioms, metaphors, similes and other figures of speech May be some experimentation with vocabulary: some words may be used incorrectly	Use of precise words may be inconsistent (use of everyday or overblown language may cause jarring)	Deliberate and sustained use of precise vocabulary (descriptive, expressive, academic, technical and/or abstract) for effect
Generic exemplars	• S n • I be kin	• The adventerous dog • Stifcit	• The Erfeh • Think about	• Margin for era • Rainbow's end	• Youth gym • Plastic bags	• Don't move • And the All Blacks scored!

Sentence structure

Skill focus: the quality, effectiveness and correctness of sentences

Definition

When judging the correctness of each sentence, consider the following (note: the focus is on the use of correct forms within a sentence, rather than between sentences or paragraphs or across the text as a whole):

- word form (e.g., singular or plural)
- verb tense
- subject–verb agreement
- articles and pronouns
- use of prepositions and relative pronouns to expand sentences
- arrangement of (order of) elaborating phrases and clauses
- missing words
- order of words

NOTE: In order to make assessment of sentence structure more manageable, 'read in' missing or incorrect sentence punctuation (including full stops). (Punctuation is assessed separately, in the 'Punctuation' element.)

Category	R1	R2	R3	R4	R5	R6
Descriptor	**Few correct sentences**	**Correct sentences are short and may have minimal extension**	**Correct sentences begin to show variety in structure and type**	**Most sentences are correct** **Correct sentences show variety in structure, length and type and have extending phrases and/or clauses** **OR** **All sentences are correct but repetitive**	**Sentences are controlled and show variety in structure, length and type and have extending phrases and/or clauses**	**Sentences are deliberately crafted to impact and engage**
Notes	Text consists of fragments, phrases or sentences with missing words Some meaning is discernable	Sentences may be simple and/or compound and/or basic complex May contain long, run-on sentences with overuse of conjunctions	Some sentences may have repeated structures Errors in longer sentences may be brought about by use of speech-like structures	May attempt to use sentences for effect	Some sentences may be controlled for effect Meaning is clear (may be some inconsistency or minor error)	Sentences express precise meaning
Generic exemplars	• The girl • Yea I'm agree	• The adventerous dog • Stifcit	• The Erfeh • My iPod	• Rainbow's end • When I	• Evolving life pattern • Plastic bags	• Don't move • And the All Blacks scored!

Punctuation

Skill focus: the accurate use of sentence punctuation markers and the range and accuracy of other punctuation to aid understanding of the text and to enhance meaning

Category	R1	R2	R3	R4	R5	R6	R7
Descriptor	**Little, no or random punctuation**	**Experimentation with sentence punctuation**	**Some correct use of sentence punctuation**	**Correct punctuation of most sentences – beginning and end – AND some correct use of other punctuation** **OR** **Correct punctuation of ALL sentences – beginning and end – with no other punctuation used**	**Correct sentence punctuation AND correct use of other punctuation (contractions, commas in lists) with experimentation in complex punctuation (e.g., direct speech, commas for phrases and clauses)**	**Punctuation assists meaning** **Sentence punctuation is correct AND a wider range of other punctuation is used correctly, including capital letters**	**Control of punctuation to enhance meaning** **Few or no errors in punctuation**
Notes	**FULL STOPS** May be one full stop at end of writing	**FULL STOPS** Used separately to meaning of text (e.g., random, end of line or end of page). May be one instance of correct use	**FULL STOPS** Some sentences may be joined by commas	**FULL STOPS** Sentence endings are marked by full stops, exclamation marks or question marks	**FULL STOPS and CAPITAL LETTERS** May have some minimal incorrect use	**FULL STOPS and CAPITAL LETTERS** May be some minor error in sentence punctuation	**FULL STOPS and CAPITAL LETTERS** May be some minor error in sentence punctuation
	CAPITAL LETTERS Letter formation may make it hard to distinguish whether capitals are intended for sentence beginnings or proper nouns	**CAPITAL LETTERS** Letter formation may make it hard to distinguish whether capitals are intended for sentence beginnings or proper nouns	**CAPITAL LETTERS** Letter formation may make it hard to distinguish whether capitals are intended for sentence beginnings or proper nouns	**CAPITAL LETTERS** Used to begin sentences May be used randomly (incorrect use, where handwriting style overrides function)			
		OTHER PUNCTUATION May experiment with contractions or commas (may be some correct use)	**OTHER PUNCTUATION** May experiment with contractions, commas or other punctuation (may be some correct use)	**OTHER PUNCTUATION** May use one or two other types correctly	**OTHER PUNCTUATION** Experiments with other types: direct speech may not use a new line for new speaker; punctuation within "" incorrect; attempts to create effects Capital letters may be used incorrectly (handwriting style overrides function)	**OTHER PUNCTUATION** May include dashes, parentheses, commas for phrases and clauses, hyphens, semicolons, colons, more control over direct speech May have one area that shows consistent weakness	**OTHER PUNCTUATION** May have minor error in complex punctuation, e.g., in direct speech or commas for phrases and clauses
Generic exemplars	• The girl • The Erfeh	• The adventerous dog • Yea I'm agree	• My iPod • Margin for era	• Plastic bags • When I	• A library • I personally believe	• Youth gym • Heavy-booted feet	• Don't move • And the All Blacks scored!

Spelling

Skill focus: the difficulty of words used and the accuracy of the spelling

Category	R1	R2	R3	R4	R5	R6
Descriptor	**Uses some letters to represent meaning** **Single letters or strings of letters that do not support meaning**	**Spells a few personal and high-frequency words correctly (e.g., my, it, if)** **Attempts words using phoneme–grapheme relationships**	**Spells a range of personal and high-frequency words correctly (e.g., school, where, friend, outside, playing)** **Attempts a wider range of words using phoneme–grapheme relationships and word chunks**	**Spells a wide range of high-frequency words correctly** **Attempts difficult word/s using phoneme–grapheme relationships and developing knowledge of spelling rules and morphemes**	**Spells high-frequency and some difficult words correctly** **Attempts difficult words using diverse phoneme–grapheme relationships, and knowledge of spelling rules and morphemes**	**Spells high-frequency and a range of difficult words with few or no errors**
Notes		Some consonants and vowel sounds (including blends and digraphs) may be reproduced correctly, e.g., -sh, -ch, ee, -ow Some words may contain all their letters but in the wrong order (e.g., fnu, swa) Records the dominant sounds in words	May attempt words with more than two syllables, e.g., amasing (amazing)	All sounds are represented in words Uses basic spelling rules but may over-generalise Achieves close approximations of difficult words	Irregular words may be spelt correctly (e.g., weird, through)	
Generic exemplars	• S n • Mi kat	• I be kin • The Erfeh	• My iPod • Margin for era	• The adventerous dog • Think about	• Evolving life pattern • I personally believe	• Plastic bags • Don't move

Appendix B: Questionnaire

Teacher Questionnaire

1. How many years of teaching experience do you have?

2. How many years have you taught in the current school?

3. What is the year level of the students you are currently teaching?

4. For how long have you been teaching this year level?

5. What practices are you currently using during writing lessons? (You may select more than one option).

- ☐ Modelling
- ☐ Feedback
- ☐ Feedforward
- ☐ Peer feedback
- ☐ Learning intentions/goals
- ☐ Success criteria
- ☐ Other

Using learning goals in the classroom can be a teacher practice that helps students to know what their next learning step is in a particular curriculum area. Often these goals are based on a student's area of weakness. Learning goals can also be known as learning intentions, however in this study they are referred to as learning goals.

If you selected learning intentions/goals in question 5, please answer the following questions. If learning intentions/goals is not a part of your current practice, please advance to question 19.

6. Do you use learning goals…

- ☐ Always
- ☐ Usually
- ☐ Sometimes
- ☐ Hardly ever
- ☐ Never

7. Are the learning goals… (You may select more than one option).

- ☐ Individualised for each student
- ☐ Based on a group's collective needs
- ☐ Based on the class's collective needs
- ☐ Other

8. During the process of setting a student's learning goal, are they… (You may select more than one option).

- In collaboration with the individual student
- In collaboration with a group of students
- With little or no collaboration with students
- Other

9. How do you decide what the learning goals should be? (You may select more than one option).

- By randomly selecting a specific writing feature on which to focus
- By looking at the student's last writing assessment for strengths/weaknesses
- By looking at a current piece of writing completed by the student
- By considering writing features related to genre
- Using a New Zealand Curriculum achievement objective
- Other

10. If a student is involved in the process of setting a learning goal, how do they decide what their learning goal should be? (You may select more than one option). If a student is not involved in the process, please proceed to question 11.

- By looking at their last writing assessment for strengths/weaknesses
- By looking at a current piece of writing they have completed
- Deciding upon an aspect of writing that interests them
- By working in collaboration with a peer
- Students are not involved in the process
- Other

11. Are the learning goals focused around… (You may select more than one option).

- Punctuation
- Grammar
- Spelling
- Language features
- Writing structure
- Vocabulary
- Handwriting
- Quantity in a singular writing sample
- Other
-

12. Do you share your students learning goals with them**?**

- Always
- Usually
- Sometimes
- Hardly ever
- Never

13. If you do share the learning goals, how often do you do this?

- Every lesson
- Several times a week
- Once or twice a week
- Several times a fortnight
- Once or twice a fortnight week
- Several times a term
- Once or twice a term
- Other
- Never (go to question 15)

14. In what way do you share your students learning goals? (You may select more than one option).

- Verbally
- Through modelling
- By writing them in students' books
- On the whiteboard
- Other

Success Criteria are specific steps that can help a student to achieve a learning goal.

15. Do you use success criteria in addition to a learning goal?

- Always
- Often
- Sometimes
- Occasionally
- Never (go to question 17)

16. When setting success criteria are they… (You may select more than one option).

- In collaboration with the individual student
- In collaboration with a group of students
- With little or no collaboration with students
- Other

17. How do the students know when they have achieved their learning goal/s? (You may select more than one option).

- You tell them
- They are able to identify evidence in their writing of their learning goal
- You and the students work this out together
- A peer tells them
- Other

18. Once a student has achieved their goal, do you go through the process of setting a new learning goal for or with your student?

- Occasionally
- Regularly
- Never
- Other

19. Are there any other comments that you would like to add about learning goals in the curriculum area of writing?

Appendix C: Intervention resource outlining the co-construction process

Co-constructing learning intentions and success criteria

1. Work with students in small groups of about 6 (an even number is good so that they can work in pairs).

2. I group the students according to their writing level (3Bs as one group, 3P/A as another group).

3. I always begin with explaining to the children the purpose for co-constructing - so that they can understand their learning intention (LI) better, it can be written in students' language, and that it's more meaningful coming from them. Always use the terminology of learning intention and success criteria when talking, as this helps to make an explicit link.

4. To identify their LI I get the kids to look at a grid which they have recorded their scores for each area of writing throughout the year. They identify their areas of weakness (the writing feature(s) that have the lowest score). If they have more than one, then I let them choose the one that they want to work on. Ideally, it is best if it's a deeper feature, but if it is a surface feature I often get them to combine with another surface feature (grammar and punctuation).

If you have not used this grid, then they can just look at the marking template that their most recent sample was marked on.

Or if your kids are unable to select their own LI then give them their LI, and go straight to co-constructing their success criteria (SC)s.

5. Get the kids to tell you and the group out loud what they want to work on.

6. Pair up kids that are working on the same writing feature, and say that this will be their LI for the next few weeks or until they have achieved it.

7. Get them to type their LI onto a google doc (with an empty LI) or write onto an empty LI sheet

8. Either stop here and tell the kids you will write their SC for them, or ideally…

9. Get them to talk in their pairs what SC they need to help them achieve that LI, if this easy for them to identify get them to type/write this directly onto their LI sheet

Scaffolding to achieve co-constructed SC

10. If they need more scaffolding, use an old/new writing model and help them to identify/highlight what their LI looks like in that piece of writing. Provide as much support as needed.

For example, if their learning intention is to work on vocabulary, they would have highlighted adjectives, verbs and topic words plus more. These would become their SC. Below is an example of what that may look like.

WALT - use interesting vocabulary to engage the reader				
Success Criteria	Me	Miss R	Peer	Other
• I have used interesting adjectives (transparent and exquisite)				
• I have used interesting verbs (sprint, swift and conserve)				
• I have used topic words				
• I have used interesting and different sentence beginnings				

To Finish...

I use the • ½ ✓ system for assessing, and once the children have achieved a ✓ for each SC, then you and they know it is time to get a new LI. I would then use their last piece of writing to identify what they need to work on next.

Links

Empty LI sheet

Example for 3A/4B/4P LI

Example for 3P LI

Example for 3B LI

Example for 2A LI

Example for 2P LI

Appendix D: Information sheets

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

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INFORMATION SHEET FOR TEACHERS

Accelerated learning through co-constructed goals.

My name is Essie Russell and I am a Master's student at Victoria University of Wellington. I am undertaking a research project leading to a thesis. The project I am undertaking is examining whether the co-construction of learning goals will accelerate a student's learning in the area of writing, and will focus on Year levels 4-6. My research is supervised by Dr. Vivien Van Rij, Victoria University Wellington, Senior Lecturer, School of Education, ph: 463 9706 and Dr. Michael Johnston, Senior Lecturer, School of Education, ph: 463 9675.

The research will involve an initial meeting with you to discuss the project, during this time an information sheet and consent form will be provided. After this meeting I will ask you to complete a short questionnaire about your current classroom practice, and ask that your students complete an e-asTTle writing test which will provide baseline data for the remainder of the study (time interval 1).

Following this, approximately three weeks into Term Two 2015 (time interval 2) data will be gathered through identical methods (as described above) as a way to measure student progress and monitor your practice. You will then be invited to participate in some professional development on co-constructing learning goals. During this time, I will cover how to co-construct learning goals, and some effective ways of using the learning goals within the classroom. On-going support with co-construction will be provided if necessary.

At the end of Term three 2015 (time interval 3) data will once again be recorded through an e-asTTle writing test completed by the students. This data will be used to make comparisons with the earlier data. I will also ask you to fill out a final questionnaire.

Confidentiality will be assured as the school will not be identified and pseudonyms will be used for students. The information gathered from this study will be kept in a secure cabinet in a locked office at Victoria University, and will be viewed by my supervisors and myself. The data reported in written form will be kept for a period of two years and then destroyed. A summary of the results

will be made available in written form on completion of the project. Data obtained may be used for conference papers and or publication and will be shared with teachers and other interested people. This proposal has the approval of the Victoria University Wellington Faculty of Education Ethics Committee.

If you have any questions concerning this information, please feel free to contact my supervisors for an explanation.

Yours sincerely
Essie Russell

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

Faculty of Education

PO Box 17-310, Karori, Wellington, New Zealand
Phone 4-463 9500 Fax 4-463 9649
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INFORMATION SHEET FOR PRINCIPAL and /or BOARD of TRUSTEES

Accelerated learning through co-constructed goals.

My name is Essie Russell and I am a Master's student at Victoria University of Wellington. I am undertaking a research project leading to a thesis. The project I am undertaking is examining whether the co-construction of learning goals will accelerate a student's learning in the area of writing. My research is supervised by Dr. Vivien Van Rij, Victoria University Wellington, Senior Lecturer, School of Education, ph: 463 9706 and Dr. Michael Johnston, Senior Lecturer, School of Education, ph: 463 9675.

The research will involve an initial meeting with your Year 4 to 6 teachers to distribute information sheets and consent forms. The teachers will complete a short questionnaire about their current classroom practice, and their students will complete an E-AsTTle writing test which will provide baseline data for the remainder of the study (time interval 1).

Following this, approximately three weeks into Term Two (time interval 2) data will be gathered through identical methods as a way to measure student progress and any changes in the teachers practice. I will then collectively meet with the participating teachers and provide professional development on how to co-construct learning goals with their students in hope they will use this practice within their classrooms. On-going support will be provided if necessary.

At the end of Term three (time interval 3) data will once again be recorded through an E-AsTTle writing test completed by the students. By comparing this data with time interval 2, I will be able to detect any progress, and compare it against any progress made between time interval 1 and 2. Teachers will also answer the questionnaire again so I can observe any changes in their practice following the professional development on co-constructing learning goals.

My research is hoping to find that as a result of co-constructing learning goals in the classroom, students' progress accelerates.

Confidentiality will be assured as the school will not be identified and pseudonyms will be used for students. The information gathered from this study

will be kept in a secure cabinet in a locked office at Victoria University, and will be viewed by my supervisors and myself. The data reported in written form will be kept for a period of two years and then destroyed. A summary of the results will be made available on completion of the project. Data obtained may be used for conference papers and or publication and will be shared with teachers and other interested people. This proposal has the approval of the Victoria University Wellington Faculty of Education Ethics Committee.

What I would like from you:

- Your written permission to conduct my study at your school
- Your permission to use the data obtained for conference papers and/or publication
- Your permission to interview your Year 4 to 6 teachers

On receiving your acceptance to be part of the research study, I will provide all participants with the necessary information about the study and the relevant consent forms.

If you have any questions concerning this information, please feel free to contact my supervisors for an explanation.

Yours sincerely
Essie Russell

Appendix E: Consent Forms

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Title of project: Accelerated learning through co-constructed goals

Researcher: Essie Russell, Faculty of Education, Victoria University of Wellington

Teacher Consent Form

Please tick the following boxes to indicate that you agree with the statements and to provide informed consent for your participation in this project and that of your class.

- ☐ I have been provided adequate information and explanation of the research project.
- ☐ My questions and concerns have been answered to my satisfaction.
- ☐ I understand that my participation is voluntary. I understand that I can withdraw without having to give reasons or without penalty of any sort.
- ☐ I understand that the data collected on me and my class will be kept confidential to the researcher and her research supervisors. I understand that my name will not be used for publication and conference presentations.
- ☐ I understand that all data will be destroyed five years after the submission.
- ☐ **I agree** to participate in this research. This will involve answering a questionnaire and my students completing an e- asTTle writing test over three different time periods.
- ☐ **I do not agree** to participate in this research.
- ☐ I request a summary of research findings.

Name of Teacher: _____

Signed: _____

Date: _____

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Title of project: Accelerated learning through co-constructed goals

Researcher: Essie Russell, Faculty of Education, Victoria University of Wellington

Principal Consent Form

Please tick the following boxes to indicate that you agree with the statements and to provide informed consent for Room ____to participate in this project.

- ☐ I have been given an explanation of the research project and understand this. I have had an opportunity to ask questions and have had them answered to my satisfaction.
- ☐ I understand that I may withdraw permission for my school to be part of this study up to the end of data gathering.
- ☐ I understand that the data collected on my school will be kept confidential to the researcher and her research supervisors.
- ☐ I understand that the findings published from this study will not include any information that leads to the identification of the children, the teacher, the school or me.
- ☐ I understand that all data will be destroyed five years after the submission.
- ☐ **I agree** to allow Room _____to participate in this research. This will involve allowing the researcher to interview and audio record interviews with the teacher and observe and take notes during classroom situations.
- ☐ **I do not agree** to allow Room_____to participate in this research.

Name: _____

Signed: _____

Date: _____