

Is adolescents' progress in reading comprehension served by particular attributional views in addition to learning the reading comprehension strategies of reciprocal teaching? A mixed-methods intervention study.

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Abstract

A mixed-methods quasi-experimental design was used to identify relationships between adolescent students' attributions for their reading performance and their reading achievement by gathering baseline data from year 9 and 10 students ($n = 175$) and then investigating the effects of two stages of intervention on a treatment group ($n = 22$) and a comparison group ($n = 16$). The first stage of intervention used the instructional activity of reciprocal teaching to teach students cognitive strategies to improve reading comprehension. The second stage of the intervention combined on-going reciprocal teaching with attributional-retraining, aimed at developing internal attributions for reading performance; specifically effort-related attributions rather than attributions focussing on ability.

A baseline sample (which included the treatment and comparison samples as well as students from the wider year 9 and 10 cohort) completed a questionnaire about their attributions for their reading performance. There was no evidence of the hypothesised correlation between a measure of students' incremental mindset (internal, unstable and controllable attribution) and standardised measures of reading comprehension. Analysis of the attribution data for the baseline sample showed evidence that internal and external attributions are not, as theorised, two ends of the same continuum, rather they are separate constructs, albeit negatively correlated.

The treatment and comparison groups completed a standardised reading comprehension test and the attribution questionnaire at four time points: pre-intervention; between the two stages of intervention; post-intervention; and delayed post-intervention. A sub-sample of six students, representing a spectrum of reading achievement was interviewed to develop a better understanding of the responses provided in the questionnaire.

The combined interventions had no significant effect on students' attributions for their reading performance or on their reading comprehension achievement. Conversely, the first stage of the intervention, reciprocal teaching, did

have a significant effect on the treatment group's reading comprehension achievement immediately following the intervention and the group were observed eagerly participating in the activity with significantly increased engagement.

The combined qualitative and quantitative data from the interventions provided evidence about the complexity of adolescents' attributional beliefs. Students responded with a wide variety of beliefs that did not conform to the theorised pattern of attributional beliefs. The findings raise questions about how students form attributions for their successes and failures, in particular the direction of the causal relationship between achievement and attributional beliefs.

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I think anyone who has conducted research or written a thesis would agree that when you are immersed in the literature and struggling to make sense of your field of research it is hard not to view your thesis as your opus. However, as I near completion and contemplate future research, what I once perceived as my opus now feels more like my first original composition. Regardless, there are many people who have contributed to scoring this particular composition and to each of you, I would like to express my appreciation for your support and encouragement.

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Chapter 1: Introduction

1.1 Introducing the Issue

1.1.1 Reading literacy in a New Zealand context

New Zealand's 2009 PISA report (2010) produced on behalf of the Ministry of Education (MoE) initially suggests that New Zealand secondary school students are relatively successful internationally in the domain of reading literacy. There is however a significant gap, greater than is typical internationally, between the highest and lowest achieving 15 year-olds; a trend which is consistent with the 2006 (Marshall, Caygill, & May, 2008) and 2003 (Ministry of Education, 2004) PISA reading literacy reports. Initial findings from the 2012 PISA report (OECD, 2013) suggest that a similar gap in the reading achievement of 15 year-olds remains, in addition to New Zealand's reading performance deteriorating overall.

In their analysis of the National Certificate of Educational Achievement (NCEA), New Zealand researchers McDonald and Thornley (2005) have put these disparities in reading literacy into a wider context, suggesting that those achieving lowest in PISA are often also those who do not succeed in their NCEA qualifications. In each of the 2003, 2006 and 2009 PISA surveys, approximately 15 % of students failed to achieve beyond level one (of five levels) in the PISA test, implying that those students are not yet capable of reading skills such as: locating straight-forward information in texts; making low-level inferences; or using prior knowledge to understand a piece of text. Such a low level of reading comprehension presents a barrier for learning at the level required for NCEA qualifications.

The origins of New Zealand's adolescent literacy issues are multifaceted and include political, pedagogical and socio-economic changes. Limbrick (2001) pointed out that the increase in migration to New Zealand late in the last century changed the ethnic profile of classrooms and with it the literacy needs of students, as well as placing new demands on teachers. Tunmer, Chapman and Prochnow (2004) suggested that New Zealand's singularly whole-language approach to teaching emergent readers may be creating Matthew Effects in reading (Stanovich, 1986), whereby students who struggle to learn basic reading skills early in education are

significantly disadvantaged compared to those who acquire reading skills quickly. Matthew Effects have long-term implications on reading and more general educational success.

Under political reforms in the wake of *Tomorrow's Schools*, the 1995 (Ministry of Education) reallocation of the 0.5 Full Time Teacher Equivalent remedial reading allowance in secondary schools limited the availability of specialist reading help to adolescents. This service was designed to provide individual support to struggling adolescent readers as well as pedagogical support to classroom teachers, in terms of how best to meet the needs of these students. Its removal made the remediation of the reading literacy skills of struggling adolescents entirely the responsibility of classroom teachers, despite research indicating that in many cases secondary school teachers are reluctant, or lack the skills, to do so (International Reading Association, 2012; Tovani, 2004).

Over the last decade the MoE Literacy Taskforce has implemented several professional development programmes for secondary school teachers aimed at improving literacy skills; in particular, reading comprehension pedagogy for junior secondary school students. The most recent iteration of these programmes -The Secondary Literacy Project – emphasised comprehension strategy instruction across content areas, with the aim of equipping students with reading strategies that they could transfer between curriculum areas.

Other approaches taken to improve literacy achievement in New Zealand schools include: movement toward more culturally-responsive pedagogy (Lai, McNaughton, MacDonald, & Farry, 2004) to encourage the engagement of Māori students (Bishop, Berryman, Tiakiwai, & Richardson, 2003; Te Kete Ipurangi, 2013); instructional programmes that meet the needs of bilingual students (McNaughton, 2002; Phillips, McNaughton, & McDonald, 2002); addressing early literacy skills such as phonemic awareness (Craig, 2008; McNaughton, 2002); and the inclusion of meta-cognitive elements such as goal setting (McDonald, Thornley, Ciriza, Behumi, & Staley, 2011).

An area lacking current emphasis in MoE-led professional development for the SLP is the relationship between the acquisition of literacy skills and motivation. This could be of relevance to struggling adolescents; some researchers have suggested that it is when something poses a challenge to a learner that motivation is most needed to overcome it (Eccles, Wigfield, & Schiefele, 1998; Grant & Dweck, 2003). Indeed, in some cases, it is believed that difficulties with learning are motivational in origin, rather than cognitive (Csikszentmihalyi, 1991). Guthrie and Wigfield (2000) defined what it is to be an *engaged reader*, which includes combining the cognitive elements of knowledge and reading strategies with the social aspects of learning with others in order to be motivated to achieve individual goals. In their review of studies of reading, Guthrie and Wigfield concluded that this state of being an *engaged reader* is significantly correlated with reading achievement.

1.2 Researcher's Background

My experience over a decade as a secondary school English teacher, literacy leader and facilitator for the Secondary Literacy Project (SLP) gave me an understanding of teaching adolescents and the impact that poor comprehension skills can have on secondary school achievement, in particular in NCEA achievement. I have also provided pedagogical support to colleagues in the implementation of cross-curricular literacy programmes focussing on improved reading comprehension.

It was my experience with the SLP, and trying to implement reading strategies with mixed-ability, junior-secondary English classes in a mid-decile, predominantly Pakeha high school, that provided the motivation for this study. In my direct experience, the introduction of reading strategies proved highly successful for readers of high or average comprehension ability, yet had little effect on struggling-readers. According to students' e-asTTle reading comprehension data, after three years of the SLP, the tail of under achievement in the junior school had not shifted, and the same was true nationally. It remained relatively static at around level two of

the New Zealand Curriculum; similar to the stasis seen in the lowest achievers in PISA reading literacy from 2000 to 2009.

At my school, these struggling-readers were typically 13-to-15 year-old Pakeha boys who scored between Stanines 1 and 3 (in the bottom quartile of reading comprehension achievement for their age in New Zealand) on the *Progressive Achievement Test of Reading Comprehension*, had reasonable achievement in other curriculum areas, were native speakers of English, and were not diagnosed with defined reading disorders such as dyslexia. When talking to these students and providing assistance, it became evident that they understood what the reading comprehension strategy was and had a reasonable idea of how to apply it, but that there was an attitudinal barrier to them applying the strategy successfully. For many of them, learned helplessness was a factor; they had struggled with reading for so many years that they no longer believed they could improve their reading, no matter how hard they tried.

While professional development initiatives such as Te Kotahitanga address wider socio-cultural issues associated with literacy, such as engagement with teachers, peers and content, my experience with these struggling-readers suggested that a more targeted approach was needed; that is, what to do when a student had no persistence of effort.

My experiences with struggling-readers indicated that the relationship between reading comprehension and attributional beliefs about reading warranted further empirical investigation in regards to its influence on reading.

1.3 Aims of the Research

The present study was undertaken to investigate whether or not adolescents' reading comprehension achievement was related to their motivation. Motivation is a vast field of psychology research, and this study focuses on just one theory that is known to influence motivation; attribution theory, and how adolescents' reading

comprehension achievement may be served by particular attributional views when combined with reading strategy instruction.

A range of research literature suggests that a combination of reading strategy instruction and attributional-retraining can significantly improve reading performance (Berkeley, Mastropieri, & Scruggs, 2011; Borkowski, Weyhing, & Carr, 1988; Chan, 1996; Peterson, 1992; Short & Ryan, 1984). The majority of these studies are quantitative in design. The present study employs mixed-methodology in an explanatory sequential design, in which qualitative data were collected to provide a deeper explanation of the findings within a quantitative framework.

In the quantitative part of the research, the effects of two interventions were explored using a quasi-experimental design: reading strategy instruction within a framework of reciprocal teaching (an instructional activity where students work collaboratively to understand texts using four reading strategies); and reciprocal teaching combined with attributional-retraining (an intervention attempting to change maladaptive attributions to adaptive attributions). The intervention was conducted in two stages in order to establish whether or not changes in attributional beliefs enhanced strategy instruction.

Reading strategies, and reciprocal teaching in particular, have been associated with improved reading achievement by adolescents (Alfassi, 1998; Alton-Lee, Westera, & Pulegatoa-Diggins, 2012; Klinger & Vaughn, 1996; Westera & Moore, 1995). The collaborative construction of knowledge developed through the reciprocal teaching approach is consonant with the Māori pedagogical philosophy of *ako*, a philosophy which sees both teacher and learner in terms of reciprocal learning exchanges. The Te Kotahitanga research (Bishop, Berryman, Cavanagh, & Teddy, 2009; Bishop et al., 2003) posits such an approach as not only best teaching practice for Māori students but for all New Zealand learners.

In the present study it was hypothesised that the combination of attributional-retraining and reading strategy instruction would shift the fixed beliefs of some struggling-readers who saw the acquisition of reading skills, even in mutually supportive learning contexts such as reciprocal teaching, as being

something beyond their control. School records indicate that these students had also experienced little or no improvement in their reading comprehension performance in recent years.

1.4 Definition of Key Terms

1.4.1 Adolescent literacy

In the revised position statement on adolescent literacy, the International Reading Association (IRA) defined adolescent literacy as being "the ability to read, write, understand and interpret, and discuss multiple texts across multiple contexts" (2012, p. 2).

Although, the construct of adolescence is relatively recent, the current definition of adolescent literacy has historical roots to the early 19th century. E. L. Thorndike made a distinction between the decoding skills required to read text and the reasoning skills required to comprehend text (cited in R.Thorndike, 1973-1974, p. 145). Later in the century, Chall (1983) made a similar distinction, viewing it as the difference between learning how to read and reading to learn content. In the 1970s, R. Thorndike (1973-1974) identified 13 as the age at which these differing skills were required, that being the time at which students' learning begins to be differentiated by content. Recently however, Heller and Greenleaf (2007) posited that this could occur as early as grades three and four (eight to nine years old). The IRA definition also takes into account more recent influences on adolescent literacy such as the prevalence of technology and the needs of speakers of English as a second-language (2008).

Like the position statement, the current research literature (Alvermann, 2002; Biancarosa, Palincsar, Deshler, & Nair, 2007; Carnegie Corporation on Advancing Adolescent Literacy, 2010; Edmonds et al., 2009; Education Associates, 2006; Franzak, 2006; Manuel, 2003; Mastropieri, Scruggs, & Graetz, 2003; Shanahan & Shanahan, 2008) emphasises the complexity of the demands placed on adolescents' literacy skills, particularly in the context of modern technology. The wider position statement makes apparent the disparity between the multi-modal literacies that adolescents engage in at home; for example, social media, blogging,

texting, and gaming, and the literacy they are asked to engage in at school; for example, reading, discussing, and writing about extended texts, and critically analysing a range of texts on a similar subject (International Reading Association, 2012). Franzak (2006), in her literature review on marginalised adolescent readers, cites the contrary view of critical literacy scholars, that the disparity between adolescents home and school literacies is a “false dichotomy” (p.219); that in fact adolescents move fluidly between their experiences with multiple literacies and that there is no need to define them separately. However, for the purpose of the present study, this broad definition of adolescent literacy is restricted to school literacy, and in particular, reading literacy.

1.4.2 Reading literacy

Reading is a complex process that involves a range of interacting skills: decoding (phonemic awareness and understanding of the alphabetic principle), fluency, vocabulary knowledge and comprehension (Carnegie Corporation on Advancing Adolescent Literacy, 2010). Although, reading comprehension is the focus of this study; it is tacit that successful comprehension is reliant on decoding, fluency, and vocabulary knowledge. However, these were not within the scope of this study.

1.4.3 Struggling-readers

Although the present study is situated in in-tact, mixed-ability year nine English classes, it targets struggling adolescent readers in a general sense. A significant volume of the reading research literature is based in the domain of learning disabilities. While the struggling adolescents in this study have not been diagnosed with a defined learning or reading disability, they share aspects of the definition of a learning-disabled (LD) student (cited in Licht, 1983) in that teaching colleagues report that they have reasonable achievement across curriculum areas (although IQ measures were not available), but their reading achievement is in the bottom quartile of reading achievement nationally, as measured by the Progressive Achievement Test (PAT) of Reading Comprehension. They also share many of the off-

task behaviours and attitudinal characteristics of LD students such as learned helplessness and inattentiveness (Borkowski et al., 1988; Licht, 1983; Swanson, 1999).

Chapter 2: Literature Review

2.1 Adolescent Literacy

In the face of concerning literacy results on international measures in 1980s and 1990s, the state of adolescent literacy learning both internationally, for example in the United States (Alvermann, 2002; Jacobs, 2008), and in New Zealand (Limbrick, 2001), was catastrophised¹. A range of responses were set up to address these supposed catastrophes.

2.1.1 Addressing adolescent literacy internationally

The Carnegie Corporation of New York's Council on Advancing Adolescent Literacy (2010) made a range of recommendations to address the diverse literacy needs of adolescents and to move beyond an inoculation view of literacy instruction, whereby students are provided with literacy instruction in primary schooling that is believed to be sufficient for their reading needs through the remainder of their education. These recommendations are drawn from wider literature in the field and include: changes to education policy to emphasise literacy instruction beyond primary schooling; enhanced professional development and teacher training; more effective literacy testing and use of data; and improved pedagogy. Many of these recommendations are echoed in the revised edition of the IRA's position statement on adolescent literacy (2012).

A rudimentary requirement of effective literacy instruction for adolescents is that there is explicit instruction. While it seems obvious that this should be the case, there is consonance in the research (Alvermann, 2002; Edmonds et al., 2009; Franzak, 2006; International Reading Association, 2012; Moore, Bean, Birdyshaw, & Rycik, 1999) that secondary school teachers often assume that adolescents' levels of literacy are already adequate, and explicit reading instruction does not always occur.

¹ For example: "*A Nation at Risk*" National Commission of Excellence in Education (1983, cited in Jacobs, 2008); "*New Zealand Loses Its Crown in Reading*" (cited in Limbrick, 2001).

Reading strategy instruction is one pedagogical approach to addressing adolescents' literacy. A reading comprehension strategy is "a systematic sequence of steps for understanding text" (Harris & Hodges, 1995, p. 39) derived from the practices that good readers follow. Reading strategy instruction is a branch of cognitive strategy instruction that is underpinned by the belief that many students who face difficulties do so because they have ineffective strategies to apply to a task. This instructional practice is therefore focussed on providing them with more effective strategies, to be consciously deployed and automated with practice. Reading comprehension strategies include: connecting with students' prior knowledge (Pressley, 2002); questioning the author (Beck, McKeown, Hamilton, & Kugan, 1997); finding and paraphrasing main ideas from texts (Lauterbach & Bender, 1995); anticipatory questioning about texts (Herber, 1978); analysing text features and the structure of expository texts (Dymock & Nicholson, 2007); and reciprocal teaching (Palincsar & Brown, 1984), an omnibus strategy that incorporates predicting, questioning, clarifying and summarising, in a context of peer support and interaction.

Differentiated literacy instruction is also emphasised in the literature (Carnegie Corporation on Advancing Adolescent Literacy, 2010; International Reading Association, 2012) as a good pedagogical approach to address adolescents' literacy needs. Students' individual needs are determined from assessment, and both whole-class instruction and individual interventions are designed to address the full range of needs.

Moje (2008) and Shanahan and Shanahan (2008) moved beyond generic strategy instruction, focussing on the analysis and explicit teaching of the specific literacy requirements of different academic disciplines. Similarly, Snow (2010) explored the specific disciplinary requirements of the vocabulary and academic language used in science. This research indicates that disciplinary literacy instruction should form a normal part of classroom practice in all curriculum areas; this could incorporate strategy instruction or differentiated literacy instruction as required.

In addition to the specific skills and strategies required, the socio-cultural context in which adolescents learn these skills is also emphasised in some literature. Franzak (2006) suggested that the style of literacy instruction most likely to be successful in addressing the literacy achievement of (marginalised) adolescents is cognitive instruction of literacy skills with consideration of the way in which literacy is a social construction, that is to say that different cultures, ethnicities and socio-economic groups value literacy differently. Similarly, Alvermann's (2002) review of *Effective Literacy Instruction for Adolescents* endorsed collaborative teaching approaches that allow students to engage with peers to construct meaning from a range of texts. Alvermann also indicated that for adolescent literacy instruction to be successful it must address issues of students' self-efficacy.

It is interesting to note that Rasinski and colleagues' most recent work examining fluency and comprehension in adolescents has moved away from this broader, constructivist view of reading. Rasinski and colleagues explore reading fluency as something relevant to older readers, rather than being the domain of beginning readers as posited by Chall's (1983) *Stages of Reading Development*, and identified as a contributing factor to poor reading comprehension in adolescents (Rasinski et al., 2005), particularly a lack of prosody in reading (Paige, Rasinski, & Magpuri-Lavell, 2012). Rasinski, Samuels, Hiebert, Petscher and Feller (2011) identified that while fluency is usually the domain of oral language, similar skills are employed in silent reading fluency. In an extensive, year-long study of pre and early adolescents in the USA, using a computer-administered silent reading and fluency instructional programme, it was identified that increased fluency instruction with older students is correlated with improved reading comprehension. In a similar study with 108 struggling adolescent readers, Paige et al. (2012) identified a relationship between oral reading prosody and silent reading comprehension.

2.1.2 Addressing adolescent literacy in New Zealand

The Report of the Literacy Taskforce to the Minister of Education (Ministry of Education, 1999) examined disparities (similar to those evident in the PISA reports)

between the highest and lowest achievers in the 1990 International Association for the Evaluation of Educational Achievement (IEA) reading literacy study of nine year-olds and 14 year olds. The distribution in achievement of 14 year olds was broader than that of any other country participating in the study (Elley & Schleicher, 1994). The 1997 International Adult Literacy Survey identified similar disparities between the highest and lowest achievers in the adult reading population of 16 to 65 year-olds.

In response to the wide distribution of achievement in these international tests, a range of recommendations was made by the taskforce. One recommendation was to establish professional development programmes for secondary literacy teaching and learning. Four years later, the first of these was piloted as the Secondary Schools' Literacy Leadership professional development Initiative (Ministry of Education, 2008). Consistent with New Zealand literature that examined effective professional development in adolescent literacy through a school-wide teacher-researcher partnership (McDonald et al., 2008), these programmes were developed to apply literacy learning strategies across curriculum areas. That is, teachers of each curriculum area within secondary schools are responsible for teaching the specific reading, writing and vocabulary requirements of their discipline.

In addition to professional development programmes, in 2004 in the MoE produced a supplementary handbook for secondary teachers, *Effective Literacy Strategies in Years 9 to 13*, which provided examples of literacy strategies and how they could be used in a secondary context. Later editions of the handbook provided supporting material to conduct teacher inquiries into students' literacy needs. This later edition coincided with the publication of the updated New Zealand Curriculum (2007) document which emphasised the use of teaching-as-inquiry based on evidence from research.

2.2 Reading Strategy Instruction

2.2.1 Why a strategy approach was chosen to address the PISA problem

Reading strategy instruction has been promoted as a way of addressing the literacy needs of adolescents (Biancarosa & Snow, 2004; R. Heller & Greenleaf, 2007) and in their review of reading intervention studies for older struggling-readers, Edmonds et al. (2009) conclude that reading strategy instruction is more beneficial for such readers than teaching reading skills such as fluency and decoding. Researchers of reading support the use of strategy instruction because it makes explicit the processes that a skilled reader follows naturally and provides students with reading skills that they could transfer to other situations (Duke & Pearson, 2002; Snow & Sweet, 2003). In the New Zealand school-wide teacher-researcher partnership conducted by McDonald et al. (2008), teaching the transferable nature of literacy strategies was identified as one of five activities that could significantly impact on student achievement.

Other international intervention studies (mostly of American origin) with adolescents provide empirical support to the contention that reading comprehension strategy instruction contributes to improvement in reading literacy, in particular, with students who have specific learning or reading needs. Studies included: The use of a reading and paraphrasing strategy with three adolescents with moderate learning disabilities (Lauterbach & Bender, 1995) to improve participants' reading comprehension and paraphrasing skills. However, the results of this particular study are unreliable due to the small sample size and lack of a control group in the design of the study. In a study of 56 pre-to-adolescent remedial readers, Stevens (1988) reported an improvement in students' ability to find main ideas in expository paragraphs, compared to a control group and a group receiving classification training. For students participating in the main ideas strategy, the results indicated that their skills could be applied to paragraphs based on similar or different content. Olson and Land (2007) employed a variety of reading (and writing) strategies with over 16,000 early-adolescents and adolescents from the same school district who speak English as a second language, as a part of their eight-year longitudinal California Writing Project. Where possible, participants were compared with the rest of their cohort from the same school district, using standardised tests

as a control measure. For seven of the eight years of the project, participating students made significantly greater gains in standardised tests of reading compared to those students who served as a control group. This study provides sound empirical evidence for the use of strategy instruction to improve reading comprehension. In their study of 655 sixth and ninth-grade students reading two years below their cohort, Cantrell, Almasi, Carter, Rintamaa and Madden (2010) found that a combination of six strategies known as the *Learning Strategies Curriculum* led to significant improvement in the standardised reading scores of the sixth-grade students compared to a control group, but not in the case of the ninth-grade students.

A serendipitous benefit of employing reading strategies is that because the reading process becomes more explicit and transparent, students are facilitated to learn from their own reading behaviour as well as that of others, and teachers are enabled to identify areas of weakness in students' strategy use (Paris, Lipson, & Wixson, 1983).

Many studies have demonstrated success in the use of reading strategies with learning disabled students. Swanson's (1999) meta-analysis of reading intervention studies with such students identified that while strategy instruction alone was effective, the combination of direct instruction and strategy instruction yielded more substantial effects than strategy instruction alone.

Poplin (1988) opposed the use of cognitive strategy instruction with learning disabled students because it was "reductionistic" (p.394) of the teaching and learning process and decontextualized the learning. Allen (2003) cites Pressley's response to such criticism: He argues that there are times when it is imperative to teach students skills and processes out of context because it is this that enables students to identify the specific processes that skilled readers use that they need to develop.

Another criticism posited in relation to the use of cognitive strategy instruction concerns students' ability to maintain strategies once they are taught (Poplin, 1988; Pressley & Hilden, 2006). In his review of strategy instruction from an

American teacher educator's perspective, Conley (2008) extended this criticism by examining classroom experiences where it was necessary for students not only to maintain strategies but also to adapt them once they have been learned. For example, an adolescent who developed successful summarisation strategies in history in the junior school, may find that those summarisation strategies are not sufficient for success in other curriculum areas, or for history at a more senior level. Thus, Conley posits that the original summarisation strategy will need to be constantly adapted in order to achieve success.

2.2.2 Reading strategy instruction and metacognition

"Thinking about one's thinking is at the core of strategic behaviour" (Paris et al., 1983, p. 295).

A range of research (Carr & Borkowski, 1989; Conley, 2008; McDonald et al., 2011; Palincsar, 1986; Paris et al., 1983; Stevens, 1988; Wray, 2002) indicates that reading strategy instruction operates at a metacognitive level. Paris et al. described three situations in which reading strategies must be employed: emergent reading; comprehension break-downs and when a reading task is too difficult. If a student is faced with any one of these situations and is aware of it, they might be in a position to productively employ an appropriate strategy from their repertoire. This process of students monitoring their own understanding, described by Paris and colleagues as "a kind of mental pulse taking" (1983, p. 301), is the basis of strategic reading and an essential characteristic of metacognition. Paris et al. argued that the only situation in which reading strategy use does not operate at a metacognitive level is that of students adopting strategies for the sake of compliance. However, It could also be argued that when strategy use has been automatised then metacognition is not present either as the strategy has been unconsciously deployed.

In their review of the processes involved in becoming a strategic reader, Paris et al. (1983) note the critical importance of procedural and declarative knowledge,

derived from cognitive psychology and human memory systems. The authors define declarative knowledge as including “propositions about task structure and task goals” (p. 303) as well as a student’s beliefs about their ability, and procedural knowledge as the capability to execute various procedures, (for example, his or her reading strategies). They assert that procedural knowledge is “often acquired from direct instruction” (p. 303). Paris and colleagues make their own contribution to the literature by adding a third system of knowledge; *conditional knowledge*. The authors critique declarative and procedural knowledge for “only emphasiz[ing] the knowledge and skills required for performance and do not address the conditions under which one might wish to select or execute actions (p. 303). Conditional knowledge is defined as understanding which strategies to apply in which situations and is posited as the knowledge that transforms *doing* a reading strategy to reading strategically.

While Paris, Lipson and Wixson (1983) were correct in that declarative and procedural knowledge have roots in cognitive psychology, their definitions of the two have varied a little from the original dichotomy. While it is now known, because of advancements in neuroscience and biology, that human memory comprises multiple separate systems, earlier understandings (at the time of Paris and colleagues’ publication) were comprised of several conceptual dichotomies, for example, implicit and explicit memory, and procedural and declarative memory (Squire, 2004). Declarative memory is a representation system that incorporates both semantic and episodic memory (Tulving, 1972, 1995) and is “the kind of memory that is meant when the term ‘memory’ is used in everyday language” (2004, p. 173). Tulving describes how *cognitive representation systems* are explicit and guide behaviour. The conversion of that representation into behaviour however, is not a requisite function of that memory system; therefore procedural memory is required to convert the declarative knowledge into action. Procedural knowledge fits under the umbrella of non-declarative memory and is a *cognitive action system* whereby memory is expressed as performing an automatic skilled behaviour. Procedural memory is both automatic and implicit and unlike declarative memory, cannot be directly instantiated via instruction – rather, it requires practice.

The implicit and automatic nature of procedural memory (potentially independent of cognition) and the fact that it requires practice is at odds with Paris and colleagues' (1983) suggestion that it can be attained from direct instruction. When applied to the case of reading strategy instruction, a student might have declarative knowledge of a range of reading strategies, and of the appropriate situations in which to apply them, explicitly taught to them by a teacher. When they are able to apply a strategy independently, to an appropriate reading situation, without guidance from the teacher they could be demonstrating procedural knowledge of that reading strategy however, it is the automaticity of the action that is the important distinction. Interestingly, the distinction between consciously deploying a reading strategy and doing so automatically, is often made in the definition of reading strategy instruction, that is, that reading strategy instruction teaches the processes that good readers do naturally/unconsciously.

2.2.3 Reciprocal teaching

Palincsar and Brown's (1984) reciprocal teaching method is a widely researched instructional activity that utilises reading comprehension strategy instruction and encourages metacognition. It is conducted in groups, and explicitly teaches the strategies that expert readers implicitly follow when reading: predicting; questioning; clarifying and summarising, in a dialogical model in which the support of the teacher is gradually withdrawn from the group leaving students to read and co-construct meaning unaided.

The practice of reciprocal teaching is underpinned by Vygotsky's (1978) social learning theory of the zone of proximal development where an expert reader (a teacher, or a peer with high reading achievement) helps to bridge the gap between what novice readers can read with and without support. A scaffolded (Wood & Middleton, 1975) approach to reading is employed, whereby the expert initially models the cognitive reading strategies, making their thought process explicit to the novice, while the novice remains a spectator; then the novice gradually assumes some of the workload with the support and guidance of the expert; eventually when

the student is ready and they have internalised the cognitive reading strategies they can assume the full workload and the expert removes the scaffold. The four reading strategies: predicting; clarifying; questioning; and summarising, employed in reciprocal teaching are both “comprehension-fostering and comprehension-monitoring” (Palincsar & Brown, 1984, p. 121) providing students with strategies to read and comprehend text as well as metacognitive strategies to identify when a comprehension breakdown has occurred and how to remediate it.

In Hattie’s (2009) synthesis of meta-analyses relating to achievement, reciprocal teaching is ranked ninth out of 138 possible influences with a large effect size ($d = .74$). Hattie’s analysis of reciprocal teaching is based on the meta-analyses of Rosenshine and Meister (1994) and Galloway (2003).

Rosenshine and Meister’s (1994) often-cited synthesis of 16 American experimental studies of reciprocal teaching espoused the benefits of this instructional activity. Each reciprocal teaching treatment group made significant gains in reading comprehension compared to the control group, indexed by experimenter-developed measures of reading comprehension, with a large aggregated effect size ($d = 0.88$). Importantly for the present study however, this result was replicated in only two of nine studies that employed standardised tests of reading comprehension instead of (or in the case of five studies in addition to) experimenter-developed measures; the average effect size was considerably smaller ($d = 0.32$). Rosenshine and Meister offer a comparison of Level D of the Gates-MacGinitie reading comprehension test and the comprehension passages developed by Palincsar (cited in Palincsar & Brown, 1984), both of which are frequently cited in their meta-analysis, by way of explanation. While Palincsar’s passages are greater in length than those in the Gates-MacGinitie, Rosenshine and Meister argued that they are more considerate in their use of text features, in particular topic sentences, which allow students easier access to the information in the text, therefore not requiring them to re-read the passage of text as often to find the meaning. They also argued that the greater length of Palincsar’s passages provides students with a greater context to help them answer the questions, in particular, inference questions.

Rosenshine and Meister's synthesis did not include studies focussed on high-school aged students. One study was situated in a vocational college and nine studies used participants of middle-school age; hence there was a gap in the literature about the effectiveness of reciprocal teaching with adolescents. Westera and Moore (1995) and Alfassi (1998) addressed this gap with their intervention studies of adolescents in New Zealand and America (discussed later in this chapter).

An additional limitation of Rosenshine and Meister's meta-analysis, indicated by Galloway (2003) in her follow-up meta-analysis of 22 studies of reciprocal teaching, was that their synthesis was largely based on unpublished work which has the potential to confound the results of the meta-analysis due to methodological inconsistencies.

In her meta-analysis of published, quantitative studies of reciprocal teaching, Galloway (2003) also found discrepancies between the moderate average effect size reported in studies that employed standardised tests of reading comprehension ($g = .56$) compared with the large effect sizes of studies that employed researcher-developed tests ($g = .92$). Galloway showed that the difference between these effect sizes was not statistically significant with a criterion of $p \leq 0.05$. Assuming that there was therefore *no* difference between the effect sizes on the basis of this finding, Galloway went on to average these values giving "a mean weighted effect size of .74" (p. 102). However, this approach is flawed because Galloway employed a conservative 0.05 significance criterion to reject the null hypothesis. In fact the actual p -value of .105 indicates there is only 11% probability that the effect sizes are drawn from the same sampling distribution. It is therefore most unlikely that Galloway's averaging procedure is legitimate.

Galloway does concede however, that the discrepancy between her findings and those of Rosenshine and Meister (1994) may be due to the relatively small sample size of the studies included in both meta-analytic reviews and therefore, the discrepancies between standardised and researcher-developed tests identified by Rosenshine and Meister may be valid. Galloway did conclude however, that there

were significant differences in effect sizes between studies that employed a small-*n* group design rather than a between-group design.

Westera and Moore's (1995) study of New Zealand year nine, struggling-readers who participated in two reciprocal teaching conditions of short (between six and eight hours) or long (between 12 and 16 hours) durations compared with a no-treatment control group, was included in Galloway's (2003) meta-analysis. The study found that struggling readers in year nine made significant progress in reading comprehension with a large average effect size ($g = .67$), after participating in reciprocal teaching over a longer period, as measured by the standardised Progressive Achievement Test of Reading Comprehension. These gains were maintained over a three to seven month period. This study makes a unique contribution to the research literature in that it is situated in a high school setting, the reciprocal teaching is facilitated by the classroom teacher and in that few studies have demonstrated significant gains in reading comprehension as measured by standardised tests.

Also included in Galloway's (2003) meta-analysis was Alfassi's (1998) study of high school remedial readers in intact classes, where the treatment group participated in reciprocal teaching and the control group received training in skills acquisition over an approximately 20 day period. The findings were consistent with those of Rosenshine and Meister's (1994) synthesis, in that significant gains in reading comprehension with a large effect size ($g = .81$), compared with the control group, were reported when measured using experimenter-developed reading comprehension tests but not with standardised tests of reading comprehension ($g = -.26$).

In Klinger and Vaughn's (1996) study of adolescents who spoke English as a second language, students made similar gains in reading comprehension whether they participated in mixed-ability co-operative reciprocal teaching groups or in groups that employed cross-age tutoring. This study used both experimenter-developed tests and standardised tests of reading comprehension; while there were similar discrepancies between the effect sizes of the reading comprehension

outcome measures as in Rosenshine and Meister's synthesis, a large effect size was reported for standardised tests ($g = .67$), the same as in Westera and Moore's (1995) study.

In a recent study of reciprocal teaching combined with self-regulatory strategies with German pre-adolescents, Schünemann, Spörer and Brunstein (2013) found that the reciprocal teaching-only condition had a positive effect on reading comprehension compared with a control group using standardised measures although with a limited effect size ($g = .26$). This is in contrast to Spörer and colleagues' (2009) earlier study whereby the reciprocal teaching-only condition produced a large effect size ($d = 1.44$) when measured using the researcher-developed measures of reading comprehension; more than double the moderate effect size found using standardised tests.

There is clearly a tension in the reciprocal teaching literature between the positive effects observed on students' reading behaviours, and the discrepancy between the effect sizes achieved on researcher-developed and standardised measures of reading comprehension. While short-term effects of reciprocal teaching have been observed using researcher-developed measures, there is a paucity of longitudinal research using standardised tests, which would indicate whether there are long-term effects of reciprocal teaching, and whether learning can be transferred.

2.3 Reading and Motivation

There is a significant body of research on the role of students' motivation in developing reading skills. Preeminent researchers, Guthrie and Wigfield (1999), made the relationship between the two constructs explicit, noting that comprehending text is a deliberate, and therefore motivated, act; they define reading motivation as: "the individual's personal goals, values and beliefs with regard to the topics, processes, and outcomes of reading" (2000, p. 405) and distinct from an individual's attitude or interest. Eccles and colleagues (Eccles, Lord, &

Midgley, 1991; Eccles et al., 1998) identified that students' motivation does not remain constant; decreasing significantly around the time of early adolescence.

A constant theme in reading motivation research is that there are both cognitive and motivational processes involved in reading comprehension, and that motivation is multifaceted (Csikszentmihalyi, 1991; Guthrie & Wigfield, 1999, 2000; Pitcher et al., 2007). Guthrie and Wigfield (1999) identify "task mastery goals, intrinsic motivation, self-efficacy, personal interest, [and] transactional beliefs" (p.200) as being the five motivational processes that correlate positively with reading comprehension.

Amongst the issues explored in reading motivation research are pedagogical approaches considered to encourage students' reading motivation. These include providing students with more choice about what to read, teachers modelling good reading practice and providing a book-rich learning environment (Gambrell, 1996); modifying curriculum assignments to positively influence students' task-mastery goals (S. Miller & Meece, 1997); allowing students to read texts they are personally interested in (Schiefele, 1996); modifying students' attributional views towards their reading performance (Chan, 1996; Peterson, 1992) and, utilising reading comprehension strategy instruction (Guthrie et al., 1996). The present study focuses on attribution theory.

2.3.1 Reciprocal teaching, attribution and motivation

While most of the literature on reciprocal teaching focuses on the acquisition of skills, in recent work Palincsar (2003) made explicit the link between reciprocal teaching (RT) and students' motivation to read, as follows:

RT takes into consideration the influence of motivation on student learning and the kinds of attributions typically made by students who have a history of academic difficulty. Students who are anxious and feel helpless in school are inclined to attribute success with a task to "luck" and to attribute failure with

a task to their own lack of ability. Students making these kinds of attributions need to make connections between engaging in strategic activity and the outcomes of this activity. RT enhances motivation by increasing student awareness of the kinds of factors that influence learning outcomes; furthermore, as students become experienced with RT dialogues, they come to appreciate the relationship between their activity as readers and the outcomes of this activity (p.104).

2.4 Attribution Theory

Heider (1969) introduced attribution theory as a method of explaining interpersonal relations and using them to predict future interactions. According to his theory, people's everyday explanations for their own behaviour, or the perceived behaviour of others, could be grouped into two categories: *personal* (internal) and *situational* (external) interactions. Rotter (1966) strengthened this theory with his work on internal and external factors (locus of control) and their relationship to reward and reinforcement.

A marked development in attribution theory came when Bernard Weiner applied it to academic achievement and identified the salient causes for success and failure as being: effort, ability, luck and task difficulty. In the following decade, Weiner (1979) added the dimension of stability to the locus of causality (the renamed locus of control); and then added a third dimension, controllability. The three causal dimensions refer to: *locus of causality*, which determines whether a cause was internalised to the person or externalised to a situation; *stability*, which determines whether a cause will remain static (stable) over time, or change (unstable); and *controllability* which determines whether or not a cause can be influenced by the individual. Figure 2.1 classifies the salient causes for success and failure according to Weiner's three dimensions. Weiner maintains that each of the three dimensions forms its own continuum, rather than a dichotomy.

Causes of Success and Failure, Classified According to Locus, Stability, and Controllability

Controllability	Internal		External	
	Stable	Unstable	Stable	Unstable
Uncontrollable	Ability	Mood	Task difficulty	Luck
Controllable	Typical effort	Immediate effort	Teacher bias	Unusual help from others

Figure 2.1. Salient causes of success and failure classified by three loci, from Weiner (1979)

Almost two decades after Weiner's application of attribution to academic contexts, Butler and Orion (1990) identified that there was a fifth cause for success or failure in their study of 10 year-old Israeli students. They identified the existence of "mystery attributions" (Alderman, 2008, p. 32), whereby low-achieving students were more likely to attribute the outcome of their school examination to unknown causes.

According to Weiner's (1985) theory, applied in an academic context, students' attributions for their achievement – in particular their failure – can be incredibly powerful in increasing or limiting motivation. For example; a student who does poorly in a standardised reading test but attributes that performance to a lack of preparation or lack of effort (an internal, unstable and controllable attribution) will be more motivated to work harder and prepare more in the future, because they believe that they have control over the outcome. However, a student who believes that their poor performance is a result of low reading ability (an internal, stable and uncontrollable attribution) will not be motivated to put in more effort or prepare more because they believe that they are not in control of the outcome.

In further examining the three dimensions of attribution theory, Dresel, Schoeber and Ziegler (2005) illustrated a limitation of the theory, showing that different causal attributions for performance could be made by different students, but that those two attributions could share the same dimensionality. For example, one student might attribute his success in a mathematics test to the effort that he put into studying, whereas another student might attribute her success to the strategy she used to remember the order in which to deal with the mathematical

operations; nonetheless, both of these attributions are internal, unstable and controllable. For this reason, the authors recommend going beyond the dimensionality alone, and trying to establish the *causal mechanisms* of the attribution.

Weiner's contemporary, Dweck (1975; Diener & Dweck, 1978) explored the stability and controllability dimensions of the theory in regards to internal attributions (effort and ability) when applied to cases of learned helplessness – “the perceived inability to surmount failure” (1978, p. 451). Dweck theorised that students in a state of learned helplessness express attributions for failure in relation to a lack of ability whereas, *mastery-oriented* students (those who love the challenge of learning and persist when faced with difficulty) did not engage in the process of making attributions. Later work by Dweck and Elliot (1983) concluded that helpless and mastery-oriented responses were differentiated by the types of goals that students set for themselves in achievement situations.

Weiner countered Dweck's suggestion that mastery-oriented students do not make attributions by elucidating on the nature of attributions as “quite retrospective, summariz[ing] a number of experiences, tak[ing] place below a level of immediate awareness” (1979, p. 4) concluding therefore, that it may have only *appeared* as if mastery-oriented students were not making attributions, and with time their attributions for their performance may have been revealed.

Dweck (1999, 2008; Dweck & Bempechat, 1983) went on to develop a theory of intelligence that dichotomised internal attributions into either an *incremental* or an *entity theory* of their intelligence. An entity mindset is that which Weiner would define as an internal, stable and uncontrollable attribution. It is a fixed view of intelligence encompassing both gifted and struggling students who believe that they only have a certain level of intelligence that cannot be changed with effort. As a result, the entity mindset becomes about maintaining the appearance of being capable. Students avoid work that is too difficult, thereby avoiding getting it wrong or having to ask a question which would expose them as appearing incapable. The converse mindset is the incremental mindset – an internal, unstable and

uncontrollable attribution – whereby students believe that they can grow their intelligence through effort, task-mastery, taking challenges and learning from mistakes. In their study of pre-adolescents beginning junior high school, Henderson and Dweck (1990) argued that students' theories of intelligence are accurate predictors of their achievement and that there is a relationship between the theory of intelligence held by a student and their achievement. Successive studies have made similar claims about the causal relationship between attributions and achievement (for example, Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2007; Good, Aronson, & Inzlicht, 2003). Whereas an incremental theory was argued to enhance learning, the converse theory was argued to undermine achievement (see for example, Hong, Chiu, Dweck, Lin, & Wan, 1999; Leonardi & Gialamas, 2002).

Some literature questions the causal links in Dweck's theory; that is, whether it is indeed the theory of intelligence/mindset that causes high or low achievement, or whether it is the achievement (and perceived competence of the student) that causes the mindset. The results of Gonida, Kiosseoglou and Leonardi's (2006) year-long study with Greek pre-adolescents in their last year of elementary school contradicts Dweck's theory; finding instead that students' mindsets were "the consequence and not, as assumed, the cause in this network of relationships" (p.232). There are additional variables that might be causal on both achievement and attributional beliefs, such as the influence of a classroom teacher, and family circumstances that influence a student's view of education, which have the potential to confound any causal relationship between attributional beliefs and achievement.

Dweck's (1999, 2008; Dweck & Bempechat, 1983) dichotomous conceptualisation of attribution appears straightforward, yet it has been argued that a dichotomised theory of intelligence over-simplifies the complexities of students' beliefs about their own intelligence, and that those beliefs cannot usually be defined categorically as being entity or incremental. In Bonne's (2012) research examining primary school students' theories of intelligence, self-efficacy and mathematics achievement, she found that neither the students nor the teachers participating in her study defined theory-of-intelligence in dichotomous terms, instead forming a

continuum of beliefs. It is important to note that in current literature, Dweck's widely cited, dichotomous view of internal attribution is not consistently followed and some researchers are returning to the complexities of Weiner's model (for example, Gobel & Mori, 2007; Haynes, Ruthig, Perry, Stupnisky, & Hall, 2006; Struthers & Perry, 1996).

2.4.1 Attribution and age

Dweck (1999) suggested that society endorses an entity theory of intelligence and as students mature and their understanding of society develops they tend to shift from incremental theories to more fixed theories. Leonardi and Gialamas' (2002) work with Greek pre and early-adolescents supported this claim whereby the high school students in the study held stronger entity views than the elementary students in the study. Ablard and Mills' (1996) study of academically-talented students in America also supported this assertion, whereby the high school students in the study held stronger entity views. Conversely, Ahmavaara and Houston's (2007) study of academic aspirations of pre and early-adolescents in English Grammar and Comprehensive schools identified a negative correlation between age and the entity mindset; and Gonida, Kiosseoglou and Leonardi's (2006) longitudinal study also contradicted the hypothesis that adolescents tend toward an entity mindset, finding that the Greek students in their study adopted a more strongly incremental view in a post-test, a year after the pre-test.

2.4.2 Attribution and gender

The existing research into gender and attributional beliefs is nebulous. Dweck and colleagues (Dweck & Leggett, 1988; Licht & Dweck, 1984) found that females were more likely than males to subscribe to entity beliefs about intelligence to explain both their successes and failures in achievement situations. In addition to these gender differences, Licht, Stader and Swenson's (1989) study of American pre-adolescents found that boys were more likely than girls to attribute their successes, but not their failures, to entity beliefs. Ahmavaara and Houston's (2007) study found

no evidence of these specific gender patterns in individuals' theories of intelligence and in addition Alderman (2008) suggests that girls are more likely than boys to make external attributions for their successes.

There is also a small body of research that makes evident specific gender effects within different curriculum areas. Mathematics and the sciences are subjects have been historically gender-typed and in which ability attributions are common (K. Heller & Ziegler, 1996; Licht et al., 1989; Ziegler & Stoeger, 2004).

2.4.3 Attributional-retraining

Dweck (1975) and Weiner (1979) agree that internal attributions can be either maladaptive or adaptive and that with structured intervention, students can shift their maladaptive attributions to adaptive ones, thus increasing their motivation, in turn leading to improvement in academic achievement. According to Ziegler and Stoeger (2004), such interventions can be divided into three broad categories: *Modelling*, whereby students are presented with videos or live talks from role-models in their field who purport the benefits of adaptive attributions, generally followed with a directed discussion about how maladaptive attributions can be changed to adaptive; *written*, whereby students' views can be shifted through the feedback written on their work; and finally, *verbal*, whereby students' views can be shifted through the feedback given to them verbally about the effort they put in to a particular task or the use of a specific strategy.

The adaptive quality of verbal feedback, in particular strategically praising effort and its effects on motivation, was examined by Mueller and Dweck (1998). The premise of their research was that by praising students' efforts in both success and failure situations students are motivated to continue to learn from the situation which is an adaptive attribution. Praising their ability, it is argued, could have negative consequences because students would then only value ability – a maladaptive attribution in the case of low-achieving students – as praiseworthy, and

continue to strive to appear intelligent in the face of failure rather than learning from it.

A considerable body of literature focuses on the benefits of attributional-retraining. Dweck's (1975) study with learned-helpless children was pioneering in the field. Dweck reported that, by changing learned helpless children's responses to failure, from ability to effort based, the children maintained or improved their performance on mathematics problems compared to children who received success-only training. Attributional-retraining was also used successfully to increase self-control in a semi-longitudinal study of 77 elementary-school aged hyperactive children (Reid & Borkowski, 1987) however, these effects were only maintained over the 10 month period by the most severely hyperactive students. In both cases, these studies were conducted by researchers rather than classroom teachers, so further research is needed about the benefit of such a programme in an everyday classroom setting.

A significant number of attribution-retraining studies are situated in university education contexts and are the subject of Perry, Hechter, Menec, and Weinberg's (1993) synthesis of 12 quantitative studies. Wilson and Linville (1985) made the first contribution to this literature in 1982 with a longitudinal study of under-achieving first-year university students in which they attempted to modify the stability of students' attributions so that, students believed that even if they were under-achieving presently, their grades would improve in the coming years of their university education. This study was replicated twice in following years in response to criticism. In the original study, and both replications, Wilson and Linville achieved the hypothesised results of their study, with an increase in students' grades in the following semester compared to the control group. Significant short term effects were only seen in the case of the male participants. The remaining studies in Perry and colleagues' synthesis showed how attributional-retraining differentially affected achievement at university, for example: three studies identified beneficial long-term effects on achievement; two studies identified short term effects only with students who initially exhibited strong external attributions; two studies identified a greater effect on achievement from experimental conditions other than attributional-

retraining; and in one study, only the achievement of students who held a poor-perception of their ability to succeed was affected. Definitive conclusions cannot be drawn from this synthesis however, because there are significant methodological inconsistencies between studies; for example, not all studies had a treatment and control condition, and the studies do not consider the range of confounding variables that may influence university study such as the stress of leaving home, or learning an entirely new subject.

Attributional-retraining studies have also been successfully conducted in universities to remediate phenomena related to achievement such as over-optimism and *stereotype threat* whereby African-American students are faced with a social-psychological barrier to achievement in the stereotype of them being intellectually inferior. Haynes and colleagues (2006) emphasised controllable attributions within a relatively small-scale, year-long study of over-optimistic first-year university students which resulted in the treatment condition achieving significantly higher grade point averages (GPA) and final grades in their psychology paper than those in the control group. Only limited conclusions can be drawn from these findings however, because there was no pre-test measure of GPA in the study; and comparisons between the results of the first psychology test compared to the results of the final psychology exam do not account for variables such as attendance and participation in the course or the amount of time studying, for example. Aronson, Fried and Good (2002) emphasised an incremental mindset to a treatment condition in their relatively small-scale, nine week study of college under-graduates. The results of the study confirmed the researchers' hypotheses in that African-American students in the treatment condition reported greater engagement and enjoyment of college and obtained higher GPAs than students in either of the control conditions one of which received no treatment and the other received information about multiple intelligences. However, contrary to their hypothesis, the intervention did not reduce the perceived stereotype threat for African-American students. Because there were no pre-test measures of the variables (attributional views, perceived stereotype threat, enjoyment of college etc.), a causal connection between the retraining and the dependent variables cannot be made.

In secondary school contexts, several apparently-successful attributional-retraining studies have been reported. Good, Aronson, and Inzlicht (2003) used attributional-retraining with the aim of remediating the effects of stereotype threat to low-income early-adolescent females of ethnic-minorities on their performance in standardised tests of reading and mathematics. The results of this study confirmed the researchers' hypotheses that female students in both of the attributional-retraining conditions would achieve significantly better results in standardised tests of mathematics than females in the control condition; and that low-income, minority students in the experimental conditions would achieve better results in standardised tests of reading and mathematics than students in the control condition. Because there were no pre-test measures of students' standardised mathematics and reading results, nor any measure of students' attributional beliefs, a causal connection between the retraining and the dependent variables cannot be made. Ziegler and Stoeger (2004) used attributional-retraining with the aim of remediating gender effects on female high school students' achievement in the natural sciences in a German high schools. In a big sample of high-achieving adolescents, with a pre and two post-test design, the results of the study showed that females in the treatment condition achieved significantly better science grades than the males in the treatment condition and the control condition. An interesting finding of this study was that the attributional-retraining appeared to have no effect on the male students in the treatment condition.

Blackwell and colleagues were critical of Good, Aronson and Inzlicht (2003) and Aronson, Fried and Good's (2002) studies in that they lacked information on the long-term effects of changing attributional beliefs, thus in their longitudinal studies of early-adolescents, Blackwell et al. (2007) focussed on the distal effects of attributional-retraining on students' theories on intelligence. In their first study, following a large sample of students beginning junior high school over a four year period, Blackwell and colleagues concluded from baseline and outcome measures of mathematics that students' attributional beliefs are accurate predictors of junior high school students' mathematics achievement. In their second study, with a smaller sample of relatively low-achieving pre-adolescents, in which attributional-

retraining was utilised to teach an incremental mindset, results showed a significant increase in incremental beliefs in the treatment condition compared with the control condition, which reversed the predicted downwards trajectory in their grades. Both of Blackwell and colleagues' studies used Dweck's (1999) *Implicit Theories of Intelligence Scale* in which participants answer between three and six questions on a six-point Likert scale and are given an average score, which is used to categorise them as being oriented more towards either an entity or an incremental mindset, and are labelled thus. However, the assumed dichotomy of entity and incremental theory of intelligence does not provide any consideration of participants with more complex beliefs about intelligence; that is to say, those students who for example, while more strongly oriented towards entity beliefs also held weak incremental beliefs, or vice versa.

In Ablard and Mills' (1996) study, participants rated their attributional beliefs on a continuum allowing for middle-ground beliefs, and a wider range of stability beliefs, to be analysed. Ablard and Mills found that when the dimension of stability was considered as a continuous variable there was great variation in students' beliefs, in fact almost forming a normal distribution of beliefs from *Extreme Stability* through to *Extreme Instability*.

Licht (1983) and Peterson (1992) both identified a limitation of attributional-retraining, that it emphasises only the internal, unstable and controllable attribution of effort; the incremental mindset. Licht's research with LD students and Peterson's study of intermediate-age poor readers, both suggest that by emphasising only generalised effort, rather than the other internal, unstable and controllable attribution of strategy use, then there is the risk of developing a "gullible self-confidence" (1992, p. 81) that cannot be maintained when the student is confronted with a task in which effort alone will not be sufficient for success.

From the literature, it seems that attributional-retraining rests on two dubious assumptions: That attribution is causal on achievement, and that attribution is susceptible to the retraining mechanism.

2.5 Combining Attributional-Retraining and Reading Strategy Instruction

There is a growing body of literature reporting studies that combine reading strategy instruction with attributional-retraining. However, the findings are nebulous and difficult to infer causality from. While some studies have obtained ameliorated effects using a combined attributional-retraining and reading strategy intervention compared with a reading strategy-only intervention, others have found no significant difference between the two conditions. Included in this body of research are: Short and Ryan (1984) who successfully pioneered the combined condition in their study of fourth grade struggling-readers using story grammar training combined with attributional-retraining, which were associated with significant gains in comprehension for students in the strategy and attributional-retraining condition compared with the attributional-retraining-only and strategy-only conditions. Borkowski and colleagues (1988; 1989) employed a combination of reading strategy instruction (as well as direct instruction) and attributional-retraining, first with reading-disabled pre-to-early adolescents, and then with pre-adolescent poor readers who were not diagnosed with a learning disability. Both studies were associated with improved strategy use compared with control conditions, and in the case of the poor readers, significant gains in reading comprehension achievement compared with the strategy-only and control conditions. Kirk (2001) combined one-to-one strategies interventions with attributional-retraining for six remedial adolescent readers in a New Zealand secondary school which proved successful for three students who made significant post-test gains.

Although reporting combined reading strategy and attributional-retraining effects, the following studies also reported significant reading comprehension effects for the reading strategy-only conditions in their studies: Peterson (1992) combined reciprocal teaching and attributional-retraining with pre-adolescent struggling-readers in a New Zealand intermediate school which resulted in greater gains in comprehension for students in the strategy combined with attributional-retraining condition compared with the control condition, however the reciprocal teaching-only condition also made significant gains in comprehension – although not

of the same magnitude as the combined condition. Chan (1996) combined a range of reading strategies with attributional-retraining focussed on the benefits of strategic behaviour with Australian adolescents defined as poor or average readers which were associated with gains in both comprehension achievement and strategy use with students in either of the attributional-retraining conditions but also in the strategy-only condition. In their study of Spanish, learning-disabled (LD) pre-adolescents, Miranda, Villaescusa and Vidal-Abarca (1997) found that both the reading strategy instruction condition and the combined reading strategy and attributional-retraining condition achieved similarly in reading comprehension, compared to the LD control group, and concluded that the addition of attributional-retraining to reading strategies programmes with LD children was not any more effective than reading strategy instruction alone. Berkeley, Mastropieri and Scruggs (2011) combined a range of reading strategies with attributional-retraining with LD early adolescents which was associated with significant gains in reading comprehension with a large effect size for the combined treatment group and significant gains with a comparatively smaller, but still large effect size for the reading strategy-only condition.

The varying methods of attributional-retraining may account for some of the contradictory findings in the literature; some studies were vague and encouraged generalised effort; for example, in Short and Ryan's (1984) study they emphasised effort in reading by getting students to chorus self-statements such as *"enjoy the story; praise yourself for a job well-done"* (p. 228) and Kirk (2001) emphasised generalised effort to remedial readers. However, the methodology of her attributional-retraining varied for each of her case studies, whereas other studies such as those of Chan (1996) and Peterson (1992) emphasised specific reading strategy use. The work of Pepi, Alesi and Geraci (2004) differed from other studies in this field in that there was no explicit attributional-retraining component, instead the appropriate motivations were implicitly encouraged through the meta-reading tasks provided to the small sample of pre-adolescents during the intervention. The study produced significant comprehension gains with a moderate effect size for

students who held an incremental mindset, compared to students who held an entity mindset.

2.6 How the Literature Contributes to the Design of the Present Study

The theoretical perspectives and empirical evidence suggest that strategy instruction is an effective mode of reading instruction for adolescents, in particular struggling-readers. Reciprocal teaching combines four reading strategies in a highly-scaffolded instructional activity that allows students to be supported in a learning community of their peers, and is increasingly being used with adolescents. The magnitude of the effects of students' participation in reciprocal teaching on their reading comprehension vary based on the type of outcome measure employed; there are a limited number of studies that use solely standardised measures of reading comprehension.

Research suggests that motivation to read is correlated with reading achievement; attribution theory is acknowledged to influence students' motivation. It is also suggested that there is a causal relationship between attributional views and achievement. While theoretical perspectives of attribution differ, there is a consistent suggestion that students' attributions are susceptible to a retraining mechanism and can be positively altered to improve achievement. Few of the existing retraining studies are qualitative in nature (or contain a qualitative component) which limits the understanding of how effectively students' can be 'retrained'. In recent work, reciprocal teaching has been explicitly linked to students' motivation to read and the attributions they hold for their reading success or failure.

While there is a small body of studies that combine reading strategy instruction and attributional-retraining, there is a paucity of mixed-methodology studies that probe the effectiveness of retraining, as well as longitudinal studies that examine the transfer of reading strategies.

Chapter 3: Methods

3.1 Mixed Methodology in the Present Study

3.1.1 Methodological approaches

The central premise of mixed methods research, as defined by Creswell and Plano Clark (2007, cited in 2011), “is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone” (Chapter 1, Section 1, Paragraph 11). In accordance with this premise, qualitative interviews and observations were conducted, in addition to the collection of quantitative measures of reading comprehension and attributions of reading performance. The central research question that the study addressed was:

Is adolescents’ progress in reading comprehension served by particular attributional views, and by learning the reading comprehension strategies of reciprocal teaching?

To answer this research question, four additional research questions were developed:

1. How are junior students’ attributions of performance in reading comprehension distributed?
2. What is the relationship between junior students’ attributions of reading comprehension and their reading comprehension achievement?
3. What is the effect of a reciprocal teaching intervention to improve reading comprehension?
4. What is the effect of a reciprocal teaching intervention combined with attributional-retraining to improve reading comprehension?

Based on the theoretical perspective of Dweck (1999) that older students conform to an entity belief that is endorsed by society, and the empirical evidence provided by Leonardi and Gialamas (2002) and Ablard and Mills (1996), it is hypothesised that students in the baseline sample will hold stronger internal

attributions, than external, for their reading performance. In particular, it is hypothesised that their internal beliefs will be stable, entity beliefs about intelligence rather than incremental beliefs about the role of effort.

Based on the causal relationship established between incremental beliefs and enhanced achievement (for example, Aronson et al., 2002; Blackwell et al., 2007; Good et al., 2003), it is hypothesised that there will be a correlation between reading comprehension performance of the baseline sample and internal attributions. More specifically, it is hypothesised that the analysis of individual questions from the RAS, will reveal that there is a stronger correlation between reading comprehension performance and the question that probes incremental beliefs, as opposed to the question that probes entity beliefs.

Reciprocal teaching is hypothesised to have a significant effect on the reading comprehension performance of the treatment group, compared to the comparison group, over time based on the significant amount of empirical evidence suggesting the effectiveness of the instructional activity (for example, Allen, 2003; Alton-Lee et al., 2012; Brown & Palincsar, 1987; Duke & Pearson, 2002; Hattie, 2009; Kelly, Moore, & Tuck, 1994; Klinger & Vaughn, 1996; Palincsar & Brown, 1984; Sporer et al., 2009). The literature (Galloway, 2003; Rosenshine & Meister, 1994; Schunemann et al., 2013; Westera & Moore, 1995) highlights a tension between the effect sizes obtained when testing reading comprehension using experimenter-developed tests compared to standardised tests. Thus it is also hypothesised that the effect sizes of the gains made by the treatment group will not be as great as those achieved using experimenter-developed tests. With few, longitudinal studies of reciprocal teaching, it is difficult to hypothesise how well any effects will be maintained over time.

The effect of the combination of reciprocal teaching and attributional-retraining is difficult to hypothesise because the literature is nebulous and in some cases the reading strategy-only condition made significant gains as well as the combined reading strategy and attributional-retraining condition. However, based on Peterson's (1992) successful New Zealand study, as well as the methodologically-sound studies of Chan (1996) and Berkeley et al. (Berkeley et al., 2011), it is hypothesised that the addition of attributional-retraining to the reciprocal teaching

intervention will have a significant positive effect on the treatment group's reading comprehension performance, compared to the comparison group, over time.

Based on the attributional-retraining literature (Blackwell et al., 2007; Dweck, 1975; Haynes et al., 2006; Reid & Borkowski, 1987) that suggests that students' attributions are susceptible to retraining, it is hypothesised that the treatment group would attribute their reading performance more to internal factors, than external factors, as a result of attributional-retraining.

3.1.2 Explanatory design

This study employed an explanatory sequential design (Creswell & Plano Clark, 2011) that was repeated over two stages of a quasi-experimental intervention as depicted in Figure 3.1. *Explanatory* refers to the fact that one data set is used to explain the other data set. *Sequential* identifies the temporal sequencing of the data collection: quantitative first and qualitative, second to further explicate the quantitative. Morse's (1991 cited in, 2011) system of notation is used: *QUAN* and *qual*; the use of capital letters indicates the prioritised methodology in this study, quantitative, thus qualitative is the secondary methodology.

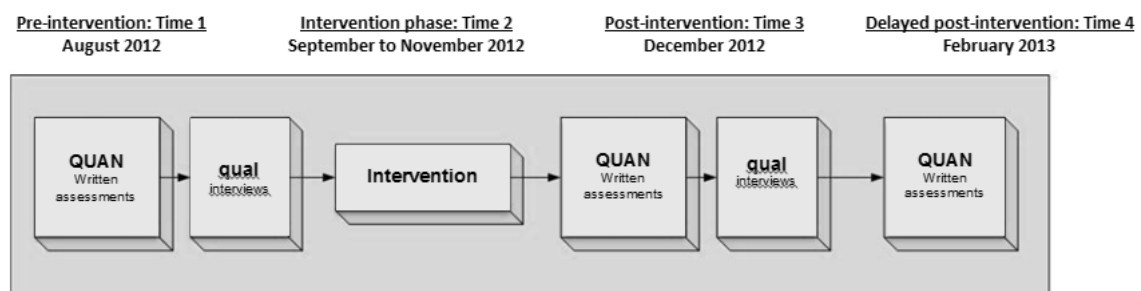


Figure 3.1. Diagram of research design adapted from Bonne (2012).

Few methodological precedents exist for this study. Of the intervention studies reviewed, the majority of attributional-retraining studies were solely quantitative in design. One study that employed mixed methodology was a study of primary school students' mathematics self-efficacy and theories of intelligence (Bonne, 2012) and this too followed an explanatory sequential design.

3.2 Implementation

3.2.1 Setting

Mountainview High School² is a large mid-decile, co-educational high school (years nine to 13) in suburban New Zealand. The ethnic make-up of the school is predominantly Pakeha (73%); with Māori students being the next largest ethnic group at 18 % of the school's population. There is significant transience in the school's population; a suggested reason for this is a nearby prison, with many families moving to the area to be nearer to inmates.

Mountainview High School is characterised by low achievement comparable to other schools of its size and decile rating. Reading comprehension achievement is below the national norm for year nine students and substantially below the national norm for year ten (Te Kete Ipurangi, 2010b). Achievement in all levels of the NCEA is also significantly below the average of the national cohort (New Zealand Qualifications Authority, 2012).

3.2.2 Participants

Baseline data were collected from a sample of 175 year 9 and 10 students ranging from 13 to 15 years old from a total year 9 and 10 population of 301 students. The purpose of this baseline data was to identify any patterns in reading comprehension and in attributions of reading performance that could be investigated with the smaller treatment sample. Included in this sample were 106 females and 69 males. Table 3.1 shows that compared with the school as a whole, the baseline sample included a slightly higher ratio of female to male students. Table 3.2 shows that the ethnic make-up of the baseline sample: Māori students ($n = 29$); New Zealand European students ($n = 119$); Pasifika students ($n = 7$); and students of Other nationality ($n = 20$), was close to the ethnic make-up of the entire school population. The most significant difference between the baseline sample and the school population being the increase in the number of students of Other nationality.

² Pseudonym used for confidentiality.

Table 3.1. Gender profiles of school and baseline sample.

	Sample (n)	School (n)
Male students	69	351
Female students	106	413

Table 3.2. Ethnic profiles of school and baseline sample.

	Sample (%)	School (%)
NZ European	68	72
Māori	17	18
Pasifika	4	6
Other Nationality	11	4

The baseline sample also included five students who qualify for reader/writer assistance and two students who receive additional English language learning support.

Thirty-eight of the participants, comprising two intact classes, were assigned purposely to the treatment and comparison groups. Both classes were of mixed-ability and were Year 9 form classes. The treatment group of 22 Year 9 students was the class taught by the researcher. The comparison group of 16 Year 9 students was also a purposive sample, chosen because the mean achievement of this class in the initial reading comprehension tests was the closest to that of the treatment group. Of the 22 students targeted for the intervention there was an attrition of two students during the intervention; one student moved to another school and the other had on-going poor attendance.

In addition, two year 13 students (18 years old) were recruited to assist with the attributional-retraining intervention by providing a brief modelling talk to the treatment group.

3.2.3 Ethical considerations

This study followed the ethical guidelines provided by the New Zealand Association for Research in Education and the Victoria University of Wellington Human Ethics Committee and was granted ethical approval by the former on 23 August 2012.

Participants in the study, as well as the Principal and the Board of Trustees, and the parents of student participants were given information sheets with the relevant details of the proposed study, and then followed up with a brief talk about the study, with an opportunity for participants to ask questions. Consent forms were distributed following these talks. Different types of consent were requested depending on the age and level of involvement of the student. Year 10 students who were providing quantitative data only, were asked to provide their personal consent as a proxy to the passive consent of their parents/caregivers, whereas year 9 students, whether they were providing quantitative data or were invited to be in the treatment or comparison class, were asked to provide explicit informed consent from their parents/caregivers in addition to their personal consent.

All participants were informed that their name and the school's name would not be identified in any communications related to this study and that, in addition, pseudonyms would be used. While confidentiality was assured, anonymity could not be because of the qualitative portion of the study, which required that students be identified from the quantitative results in order to participate in interviews. Similarly it would have been impossible to conduct observations of the intervention in an anonymous way.

An ethical concern for this study was the conflict presented by my position as both teacher and researcher. The concerns were that I could have used my position of authority within the school to unduly influence students to participate in the study, or that it may lead to the empirical concern of researcher bias in the qualitative portion of the study. Several measures were implemented during different phases of the study to address these concerns: firstly, during the data analysis phase, another researcher independently read and coded the qualitative

data, and that coding was then cross-checked with my own. Students were also provided with transcripts of their own interviews where they were able to agree with, or refute, the content. No content was corrected on this basis however. Secondly, a trusted colleague that had no connection to myself or the study undertook the collection of consent forms from students, so that students did not feel pressured by or unable to refuse me.

3.3 Data Collection Tools

3.3.1 Quantitative measures

Two measures of students' reading comprehension were used as well as a measure of students' attributional beliefs in regard to reading.

Progressive Achievement Test (PAT): Reading Comprehension (tests 6 and 7)

The PAT is a New Zealand standardised test of reading comprehension. The tests are based on eight passages of text, and questions are in a multiple-choice answer format. Tests are scored on the PATC reading comprehension scale (Darr, McDowall, Ferral, Twist, & Watson, 2008). The duration of the tests is 45 minutes. In this study, the PAT was used in conjunction with the Reading Attribution Scale to situate the study in the wider context of the junior school.

e-asTTle Reading Comprehension

e-asTTle is a New Zealand MoE online test item bank that enables the creation of reading comprehension tests from an extensive set of standardised items, with known psychometric properties, at specified levels of the New Zealand Curriculum. e-asTTle tests are administered on computers and students answer questions in both the multiple-choice and short answer formats. Tests are scored on the asTTle reading scale ranging from 100-3000 asTTle reading scale points (aRs) and against sub-levels of the New Zealand Curriculum; for example, curriculum level four and either: basic (B); proficient (P); or advanced (A). Because e-asTTle allows the creation of different tests at the same level, and thus avoids any issues relating to

test-retest reliability, e-asTTle reading comprehension tests were used as the pre-test before the intervention began, between the different stages of intervention, as well as the two post-tests. The duration of all tests was between 36 and 40 minutes.

At each data-collection point, students were assigned one of four possible e-asTTle tests created for the purpose of this study, each spanning approximately two levels of the curriculum in difficulty: Test 1, testing curriculum levels two – three; Test 2, testing curriculum levels three - four; Test 3, testing curriculum levels four - five; Test 4, testing curriculum levels five – six. If a student's e-asTTle achievement at a previous data-collection point was at the extreme end of achievement for that test bracket they were assigned the test above or below, as appropriate. For example, if a student was assigned Test 1 (curriculum levels two to three) at data-collection point one, and they achieved at curriculum level 3P or 3A, then they would have been assigned test 2 (curriculum levels 3 – 4) at the next data-collection point.

Reading Attribution Scale (RAS)

The RAS was an abbreviated version of Berkeley, Mastropieri and Scruggs' (2011) survey and consisted of seven items scored on a 4-point likert scale (1= never true, 2=sometimes true, 3=usually true, 4=always true) and which had good internal consistency ($\alpha = .87$) and was considered a reliable measure. The original survey had seven statements worded in both the positive (e.g. "when I understand what I read it is usually because I am lucky") and the negative (e.g. "when I understand what I read it is usually because I am not lucky"). These statements, based on statements from Shell, Colvin and Bruning's (1995) earlier self-efficacy measures, targeted specific attributions including: effort; ability; luck; interest; task difficulty; teacher assistance; and strategy use. The targeted attributions are consisted with Weiner's (1979) theory of attribution that contains three dimensions: locus of causality; controllability; and stability. The abbreviated version created for this study maintained the original seven statements of Berkeley and colleagues' (2011) RAS but re-coded them so that four were positively worded and three were negatively worded. The same survey was used at each of the four different time points.

3.3.2 Qualitative measures

Qualitative data were gathered at three separate time points. The interview data were gathered in response to the reading comprehension test and completion of the RAS which immediately preceded it. The observational data were gathered during both stages of the intervention with the aim of observing behaviours from participants that would offer further explanation to the quantitative responses provided by the RAS.

Qualitative interviews

Maximal variation sampling was used to select students as interview participants so that the extremes of reading comprehension achievement were represented. Two students were selected from three broad brackets of achievement in the PAT Reading Comprehension test: Stanines 1-3; 4-6; 7-9. In the lowest bracket of achievement there were two male participants; in the middle bracket there was a male and a female participant; and in the top bracket two females. The students were aged between 13 and 14 at the time of the interviews.

Interviews were conducted at three different time points – pre-intervention; between the two stages of the intervention; and post-intervention. All six students were interviewed at the first time point, yet only five were interviewed for the remaining two time points as the male participant from the middle bracket of achievement ceased to attend.

A standardised open-ended interview protocol (Johnson & Christensen, 2008) was established for each of the three interviews (Appendix A). Questions about participants' self-beliefs and attributions of reading were amended from a successful study of New Zealand secondary remedial readers and self-beliefs (Kirk, 2001). The questions in the interview protocol varied slightly at each time point. The questions at Time one were focussed on establishing the participants' perceptions of themselves, as readers as well as their backgrounds as readers; that is, their reading habits and influences; any existing reading strategies that they used; and the participants' expectations for success. In accordance with the explanatory sequential design, the Time one interviews were sequenced after the initial quantitative data collection because they were reliant on the quantitative results to determine

appropriate interview subjects. It was intended that participants' answers would offer further explication of both their reading comprehension data, as well as of the RAS data.

The questions at Times two and three were focussed on participants' experiences with reciprocal teaching; whether or not there was transfer of the reading strategies introduced through reciprocal teaching; and identifying any change in reading attributions or expectations for success. Because it was hypothesised that there would be greater change in participants' internal attributional beliefs between Times two and three when attributional-retraining was conducted, rather than between Times one and two, any additional explanation that participants could provide about the change in their beliefs was relevant. At Time three participants were also asked if they could explain any changes identified in their RAS results across the three time points.

Observations

As participants were taking part in the intervention, I circulated between the groups conducting open-ended observations and writing notes on a standardised observation protocol (Johnson & Christensen, 2008) under the thematic headings of *Attributional behaviours* and *Participation in reciprocal teaching*. Notes were taken under these two themes, looking for participants' behaviours or comments that exhibited their attributional views towards reading comprehension, and at the way in which they engaged with and participated in the reciprocal teaching strategy.

3.4 Procedures

A mixed-method, quasi-experimental design across two stages was employed with a pre-test and post-tests at the conclusion of each stage. An additional post-test was conducted after the summer holiday period; a delay of 10 weeks.

3.4.1 Pre-intervention

All year nine and 10 students were invited to share their PAT reading comprehension test results and to complete the RAS in order to establish the wider context in which the intervention would then take place. These data were used to establish the remainder of the study, including the selection of interview participants and which classes would be chosen as the comparison group. Each time the RAS was administered it was read aloud to students to mitigate any reading difficulties.

Before commencing the first stage of the intervention, both the treatment and comparison groups sat an e-asTTle reading comprehension test of 36 minutes in duration to provide baseline comprehension data. Also at this time point, six students from the treatment group participated in the first round of open-ended interviews about their reading habits and background, as well as their attributions for reading performance.

3.4.2 First stage of intervention

The first stage of the intervention administered to the treatment group involved a reciprocal teaching programme of six and a half contact hours, spread over four weeks.

Reciprocal teaching, developed by Palincsar and Brown (1984), is an instructional activity for groups of students that teaches the strategies that good readers follow when reading: predicting; questioning; clarifying and summarising, in a model in which the support of the teacher is gradually withdrawn from the group, leaving them to read and co-construct meaning unaided.

The reciprocal teaching programme used expository texts loosely based around the theme of being successful (see schedule of texts used in Appendix B). These texts were mostly from the *Choices* series of journals produced by Learning Media with the aim of motivating struggling adolescent readers in years nine and 10 with high interest texts (Learning Media, 2010). Texts in the *Choices* series are rich with textual features such as infographics, sub-headings, captions and bolded key words that assist students in making predictions about the text.

Based on the Palincsar and Brown's (1984) Experiment 1, and the following work of Peterson (1992) and Westera and Moore (1995), students were grouped

into five mixed-ability groups that provided the optimal reading experience for everyone. The use of mixed-ability groupings allowed for skilled-readers to assume the role of teacher and facilitate the dialogue while supporting weaker readers to continue to develop their reading, in particular their comprehension-monitoring skills.

To ensure that groups followed the reciprocal teaching processes correctly, and leaving me free to observe groups, each group was provided with a set of laminated prompt cards. These cards not only outlined the activity, process-by-process, in case participants forgot, but also provided questions and prompts to guide the leader. Groups were also asked to complete a tracking sheet on which they wrote down their thoughts at each stage of the process; for example; what their prediction was for the first paragraph, and what questions they had asked. These tracking sheets allowed me to gauge how successfully the groups were working during a reciprocal teaching session if I did not get the opportunity to observe them.

At the conclusion of the first stage of the intervention both the treatment and comparison groups completed an additional e-asTTle reading comprehension test and RAS to determine if there was any shift in their reading comprehension score or attributional beliefs following the reciprocal teaching-only intervention. The same six students who were interviewed before the intervention were re-interviewed about their reading habits and, in particular, any change in their e-asTTle score, their experiences with reciprocal teaching and attributional beliefs of their e-asTTle performance.

3.4.3 Second stage of intervention

The second stage of the intervention administered to the treatment group involved an additional reciprocal teaching programme of six contact hours spread over four weeks, combined with an attributional-retraining intervention. This intervention was one session comprising an amalgam of different activities included in other attributional-retraining intervention studies (for example, Blackwell et al., 2007; Carr & Borkowski, 1989; Haynes, Daniels, Stupnisky, Perry, & Hladkyj, 2008; Struthers & Perry, 1996; Ziegler & Stoeger, 2004).

The attributional-retraining intervention began with a presentation to the group about what attributional views are and the contention that they can be changed. The process of discussing how negative (maladaptive) attributions can be changed to positive (adaptive) attributions has been used with a range of age groups from Carr and Borkowski's (1989) study with primary school students and Struthers and Perry's (1996) study of university students.

This talk was followed by a group work activity adapted from Blackwell, Trzesniewski and Dweck's (2007) attributional-retraining intervention with adolescents, in which students were presented with several scenarios and required to decide what sort of attributional beliefs were being exhibited in each scenario, and how they would deal with a similar situation. An example of a scenario from the present study is:

"Jimmy just received his reading comprehension test back. He got 14/21 which he considered to be REALLY good. Jimmy hates reading; doesn't work hard to improve his comprehension even though the teacher has given him some strategies to use and he gets extra help from the reading teacher. He went home and told his dad how he did: 'I got lucky Dad, 14/21 for reading comprehension.'"

This presentation was followed by an informal modelling talk by the Head boy and Head girl, Brad and Aurelia³. The use of mentors to model attributional beliefs through verbal instruction is a form of observational learning, one of the core beliefs of Bandura's (1977) social cognitive theory, and identified by Ziegler and Stoeger (2004) as one of three successful methods of attributional-retraining. Modelling has been used widely in intervention studies; recently with adolescents in Blackwell and colleagues' study and by way of video in Ziegler and Stoeger's study of gender differences in chemistry instruction and Haynes and colleagues' (2008) study of mastery and performance motivation in first year university students.

Aurelia and Brad each spoke for approximately 10 minutes about the value of hard work and perseverance in regard to both their academic and sporting pursuits. Each gave clear examples from their lives about how when they had continued to work hard at something they had achieved success. One such example is when

³ Pseudonyms used to protect the identity of the students involved in this study.

Aurelia illustrated the case of her Premier A netball team that only the year before had ended the season at the bottom of the grade. By increasing the team's practices from one to three times a week, as well as attending fitness sessions at school, the team ended the 2012 season in second place.

As the group continued with the reciprocal teaching intervention, the messages from the attributional-retraining intervention were re-iterated by way of micro-interventions with individual students who were demonstrating or verbalising negative attributions of their reading or the effort they were putting into reciprocal teaching. These micro-interventions involved brief verbal feedback from myself which provided students with an alternative view to that which they were expressing; a view that encouraged positive attributions. A protocol was developed for these interventions based on my previous experiences with this class, and others, as an English teacher trying to assist students in improving their reading comprehension (Appendix C). In practice, students began correcting their peers' attributions and very little intervention was needed.

At the conclusion of the second stage of the intervention both the treatment and comparison groups completed an additional e-asTTle reading comprehension test and RAS. The same six students who were interviewed before the intervention were re-interviewed about their reading habits, experiences with reciprocal teaching and attributional beliefs in regard to their e-asTTle performance. They were asked specifically about any changes in their answers to the RAS over the three time points in the hope that they could explain the changes in their views – either positive or negative.

3.4.4 Post-intervention

After a 10-week time lapse, students from the comparison and treatment groups completed final e-asTTle and PAT reading comprehension tests as well as the RAS. The time lapse was due to the summer holiday period and these follow-up tests were used to determine whether or not any intervention effects were maintained over the summer holiday period.

3.4.5 Quantitative data analysis

Quantitative data from this study were analysed to address each of the four research questions. Because of the relatively small sample sizes, all data were included, even if students had missing data at some data-collection points.

The RAS was analysed in terms of the ratio of students' responses to individual items and by principal components analysis, which identified two distinct dimensions in the data. The items of the RAS that were associated with each dimension were then calibrated to a measurement scale using Samejima's (1969) graded response model. The model calibrates each Likert-scale response category to an interval scale with students being located on the scale on the basis of their responses. Two separate scales were created, one for each of the two dimensions identified in the principal components analysis: internal attributions and external attributions. For students with extreme RAS scores; that is, they answered every question as "never true" or "always true," interpolation was used to calculate scores because such extreme response patterns cannot be calibrated.

PAT and e-asTTle data were analysed using their existing measurement scales. The PAT uses the PATC scale (Darr et al., 2008) which has been shown to be strongly correlated with other scales of New Zealand reading comprehension achievement. e-asTTle uses the aRs, its own calibrated scale (Te Kete Ipurangi, 2010a). Each of these scales was calibrated using the Rasch Model (1980).

A series of correlational analyses between the measures of reading comprehension and attribution were conducted to identify relationships between reading achievement and attributional views. These were followed by a series of repeated-measures analyses of variance (ANOVA) and *t*-tests that were used to identify differences in these variables between the intervention groups.

3.4.6 Qualitative data analysis

Qualitative data from this study were analysed thematically using Glaser's (1965) constant comparative method. Participants' interview transcripts were open-coded based on a combination of predetermined and emerging codes (Creswell, 2014). Each student's data were pooled from the separate data-collection points and treated as an individual case. Students' data were then tagged with the relevant characteristics: gender; PAT and e-asTTle reading achievement; internal and external

attributions. By tagging the qualitative data with the quantitative characteristics (reading achievement and internal and external attributions) it was possible to create links between the two data sets; for instance, looking for qualitative similarities between low-comprehending boys who have high external attributions. Similarly, observation notes were open-coded based on a combination of predetermined and emerging codes (Creswell, 2014).

Three general categories were established from the coding process: students' self-beliefs; reading ability; and attributions for reading performance. Within these, several other codes were applied to form sub-categories. At this point, an independent researcher coded the interview transcripts to see whether or not she agreed with my coding, to avoid researcher bias that might threaten the validity of the data. She too coded the data into the three general categories listed above.

The codes were analysed to address each of the five research questions, taking account of their relationship with the quantitative data. Codes that did not answer any of the research questions were retained in the hope that they may be able to explain differences in findings across the research paradigms.

3.5 Issues and Challenges

Consent of students, in particular those in year nine, proved to be the greatest issue for this study. All year 9 students were required to provide informed consent to participate, whether they were consenting to allow access to their reading comprehension data or consenting to participate in the treatment class. This process of obtaining consent from year 9 students and their parents/caregivers was onerous. On many occasions teachers were provided with duplicates of information and consent sheets to give to students to take home and share with their parents/caregivers.

The original design of the study had three groups: a comparison group; a reciprocal teaching intervention group; and a reciprocal teaching intervention group overlaid with attributional-retraining; which required the participation of an additional English teacher to lead one of the intervention groups. Regrettably, other teachers responsible for year 9 classes saw this as a particularly demanding task on

top of the many other requirements of secondary school teachers and I was unable to recruit another English teacher. As a result, the design of the study was modified to include just the treatment and comparison groups.

Chapter 4: Findings from the Quantitative Data

The initial focus of the analysis of the quantitative data was to establish a baseline profile of students' reading comprehension achievement and their attributions for that achievement. This analysis was used to inform the design of the remainder of the study, in which reading strategy and attributional-retraining interventions were implemented, to investigate any effect of these interventions on reading comprehension achievement.

Following qualitative interviews, conducted to further elucidate the baseline data, additional quantitative data were gathered to compare changes in reading comprehension and attribution between the treatment and comparison groups. Data were collected at the end of Term Three 2012 - the conclusion of the first stage of the intervention; and towards the end of Term Four 2012 - the conclusion of the second stage. Quantitative data were collected for the final time at the beginning of Term One 2013 to identify whether any effects of the interventions were sustained.

4.1 Baseline Data

4.1.1 Reading Attribution Scale

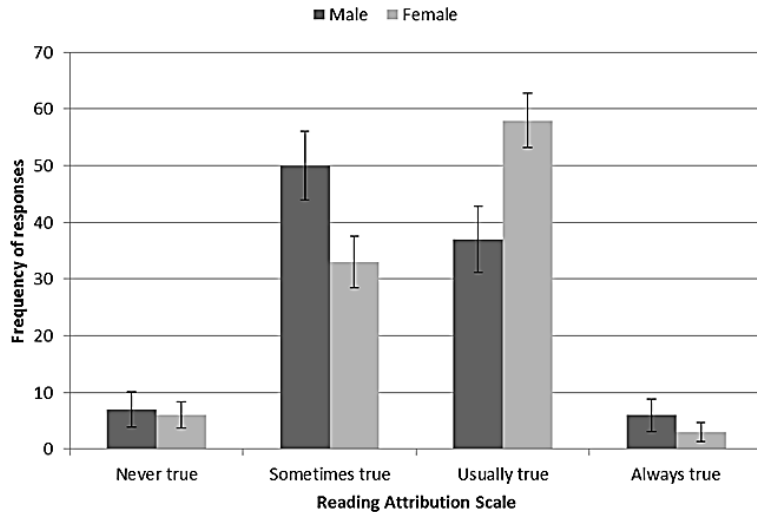
To establish a baseline profile of attributions for performance in reading comprehension, the frequencies of students' responses to each of the seven items in the RAS questionnaire were calculated and analysed. Because of the well-documented gender-gap in literacy achievement in New Zealand, data were disaggregated by gender for further analysis. As shown in Figure 4.1, each of the seven items in the questionnaire had four possible responses:

1. When I understand what I read, it is usually because I work hard.			
Never true	Sometimes true	Usually true	Always true
1	2	3	4

Figure 4.1. Question 1 of the RAS

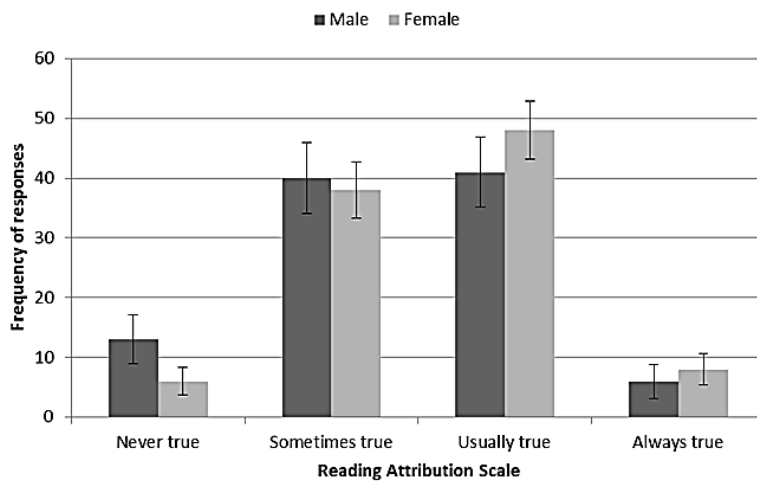
During the analysis, it was decided to omit from the study the results of the sixth question of the RAS, “*when I don’t understand what I read, it is usually because I am not lucky.*” The wording of the question using the double negative made it difficult to understand for the participants therefore rendering the responses invalid.

Figure 4.2 shows the distributions of students’ responses to the first three questions of the RAS, which all probe internal attributions for reading performance. There is no consistent pattern in the way that responses are distributed. Female students showed a greater propensity than male students to attribute their reading performance internally for Questions 1 and 2, but not for Question 3.



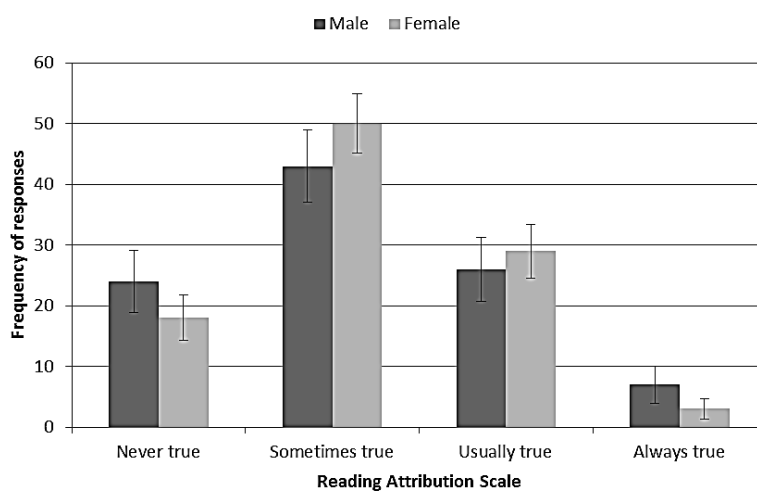
Question 1: when I understand what I read, it is usually because I work hard

(internal, unstable, controllable)



Question 2: when I understand what I read, it is usually because I am smart

(internal, stable, uncontrollable)



Question 3: when I understand what I read, it is usually because I use strategies

(internal, unstable, controllable)

Figure 4.2. Student responses to Questions 1, 2 & 3 of the RAS disaggregated by gender. Error bars represent the standard error of the proportion. Labels in brackets identify how the question probes Weiner's (1979) three dimensions of attribution: causality; stability; controllability.

Chi-square tests were conducted to establish whether or not there was a significant difference in the distributions of male and female students' responses to the individual internal RAS questions. There was a significant difference in the way that the genders responded to each of the three internal attribution questions: Question 1, $\chi^2 (3) = 255, p = <.01$; Question 2; $\chi^2 (3) = 38, p = <.01$; Question 3, $\chi^2 (3) = 40, p = <.01$.

Although significant, the chi-square values for Questions 2 and 3 are markedly smaller than for Question 1, reflected in the somewhat more equivalent distributions shown in Figure 4.2. The difference in the responses to Question 2 could be accounted for in the 8% difference in responses to *usually true*. The difference in the responses to Question 3 was accounted for by the slightly greater percentages of female students responding to *sometimes true* and *usually true*, or by the fact that more than twice the percentage of male students responded *always true* compared to female students.

None of the baseline data for Questions 1-3 are consistent with the idea that attributions for reading comprehension success are dichotomous. The highest frequency responses are *usually true* and *sometimes true* for all three questions. Question 1 and 2 supposedly address opposing attributions – effort and ability (Dweck & Bempechat, 1983). In fact however, there were participants who attributed their reading performance to *both* hard work and being smart.

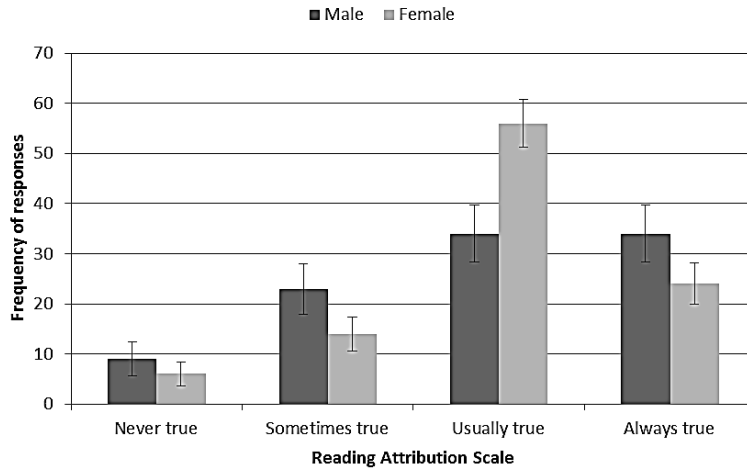
Interestingly, the distribution of Questions 1 and 3 are quite different even though the questions probed the same three dimensions; that is, attributions which were internal, controlled by the student's own volition, and that fluctuated over time. The frequency of *never true* responses is higher for Question 3 than for Questions 1 or 2. A possible reason for this is that students are uncertain of what *strategies* are.

A pattern evident in the responses to the questions probing external attributions is that both genders have a propensity to respond using either of the positively-weighted response categories, *usually true* or *always true*, indicating a general tendency among participants to attribute their reading success or failure

more often to external factors than to internal factors. Within this tendency for more frequent external attribution, male students respond *always true* more frequently than female students indicating that male students tend to attribute their reading performance externally to a greater degree than female students.

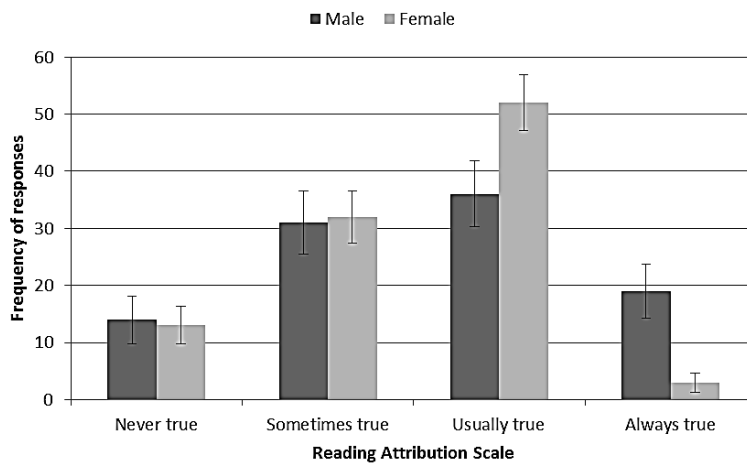
Figure 4.3 shows students' responses to remaining questions of the RAS, designed to probe external attributions for reading performance. The distribution of male students' responses to Questions 4 and 5 is a lot flatter than that of the female students' responses. Male students have also responded more frequently to the *never true* response category. The distribution of responses to Question 7 is similar across both genders.

Chi-square tests were again conducted to establish whether or not there was a significant difference in the distributions of male and female students' responses to the individual RAS questions. There was a significant difference in the way that the genders responded to each of the three external attribution questions: Question 4, $\chi^2 (3) = 226, p = <.01$; Question 5, $\chi^2 (3) = 178, p = <.01$; Question 7, $\chi^2 (3) = 52, p = <.01$. The greatest difference between the way the genders responded to the external RAS questions was seen for RAS Question 4; the strength of this difference could be accounted for in the approximately 55% of female students, compared with approximately 35% of males, responding *usually true* as shown in Figure 4.3. Similarly, the difference in the genders' responses to Question 5 could be accounted for in the almost 20% difference in responses to *usually true*. Comparatively, the distribution of Question 7 appears somewhat more even.



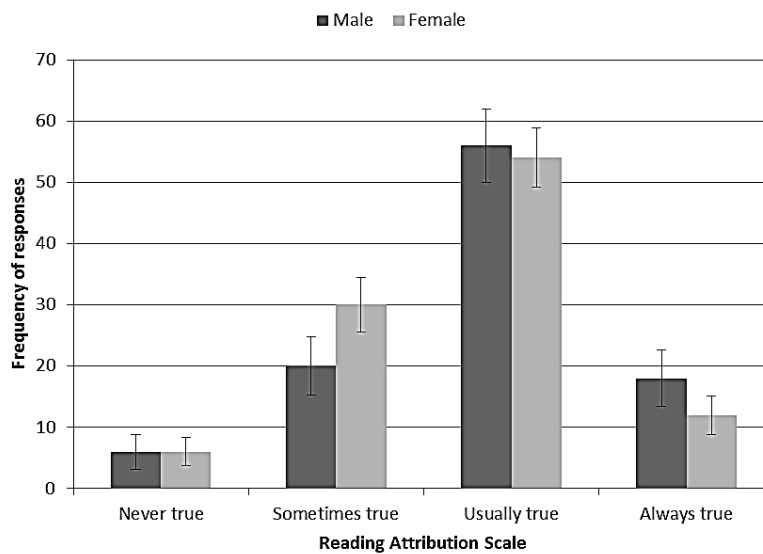
Question 4: when I understand what I read, it is usually because my teacher helps me.

(external, unstable, uncontrollable)



Question 5: when I don't understand what I read, it is usually because I did not like the topic.

(external, stable, uncontrollable)



Question 7: when I don't understand what I read, it is usually because the material is too difficult

(external, stable, uncontrollable)

Figure 4.3. Student responses to Questions 4, 5 & 7 of the RAS disaggregated by gender. Error bars represent the standard error of the proportion. Labels in brackets identify how the question probes Weiner's (1979) three dimensions of attribution: causality; stability; controllability.

4.1.2 Principal Components Analysis

After the first data-collection point, the RAS data were analysed using principal components analysis with varimax rotation, to determine dimensionality. The results of this analysis, presented in Table 4.1, show two distinct factors in the data that explain 50% of the total variance. Factor 1 accounted for 28% of the variance, with an additional 23% accounted for by Factor 2. The scree plot indicated no other substantial dimensions.

Questions 1, 2 and 3 all load strongly on Factor 1, which is indicative of internal attributions of reading performance. Question 4 probed external attributions and is strongly and negatively associated with Factor 1. The fact that the other two external attributions do not negatively load on Factor 1 tends to contradict the idea that internal and external attributions, the locus of causality, form two ends of the same continuum.

Questions 4, 5 and 7 all load strongly on Factor 2 which was indicative of external attributions towards reading. Interestingly, Question 2 which probes internal attributions also loads strongly on Factor 2 indicating that many students who attribute reading success to external factors also attribute success to being smart.

Table 4.1. Summary of principal components analysis results for the RAS ($n = 175$). Note: factor loadings $<.4$ are not shown.

	Dimension 1	Dimension 2
Variance	27.5%	22.6%
1. When I understand what I read, it is usually because I work hard	0.77	
2. When I understand what I read, it is usually because I am smart	0.52	0.59
3. When I understand what I read, it is usually because I use strategies	0.67	
4. When I understand what I read, it is usually because my teacher helps me	-0.51	0.51
5. When I <u>don't</u> understand what I read, it is usually because I didn't like the topic I was reading about		0.58
7. When I <u>don't</u> understand what I read, it is usually because the material is too difficult		0.70

The responses of the baseline sample to the RAS were calibrated to two measurement scales, one for each of internal and external attributions, created using Samejima's (1969) graded response model. Figure 4.4, shows the means and standard errors of the internal and external attribution scale locations. These data (inevitably) reflect the pattern of the responses to the individual questions of the RAS; that is, female students attribute their reading success or failure to internal factors to a greater degree than male students. A *t*-test for independent samples confirmed this finding; $t(171) = -2.36, p = .02, d = .36$; however, there was no significant difference in the external attributions of male and female students; $t(120) = .88, p = .38$.

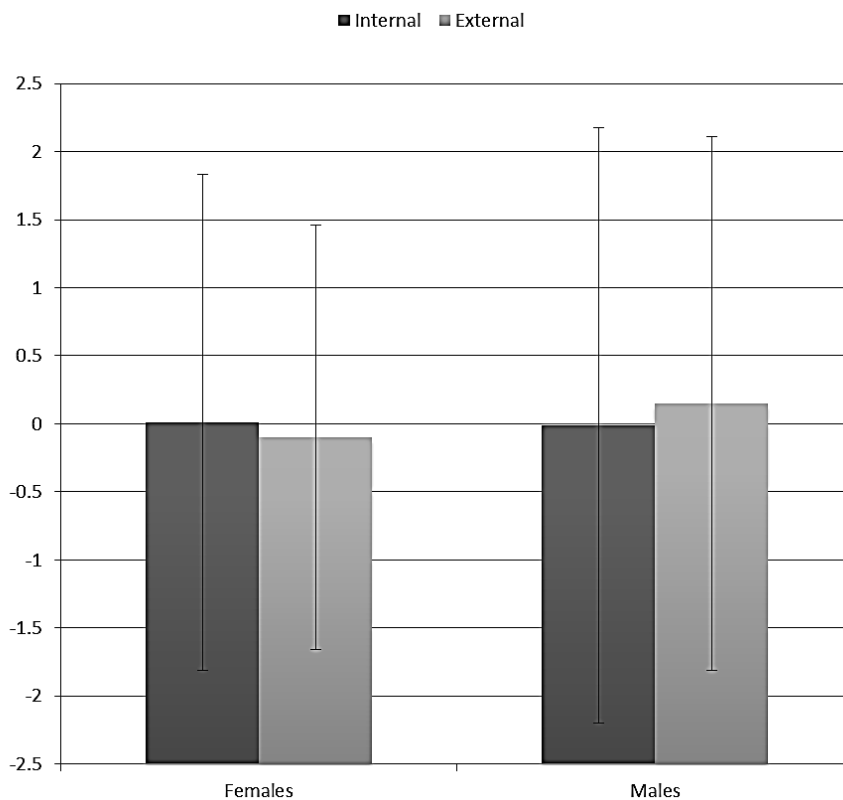


Figure 4.4. Means of internal and external attribution scale locations disaggregated by gender. Error bars represent the standard error of the mean.

4.1.3 Reading Achievement

The mean PAT Reading Comprehension achievement of the year 9 and 10 students included in the baseline sample is representative of the whole year 9 and

10 cohort of Mountainview High School, as shown in Figure 4.5, although the baseline sample does not include the extremely high scores of the cohort. Both the mean and the standard deviation of the samples are within one scale point of their respective cohorts.

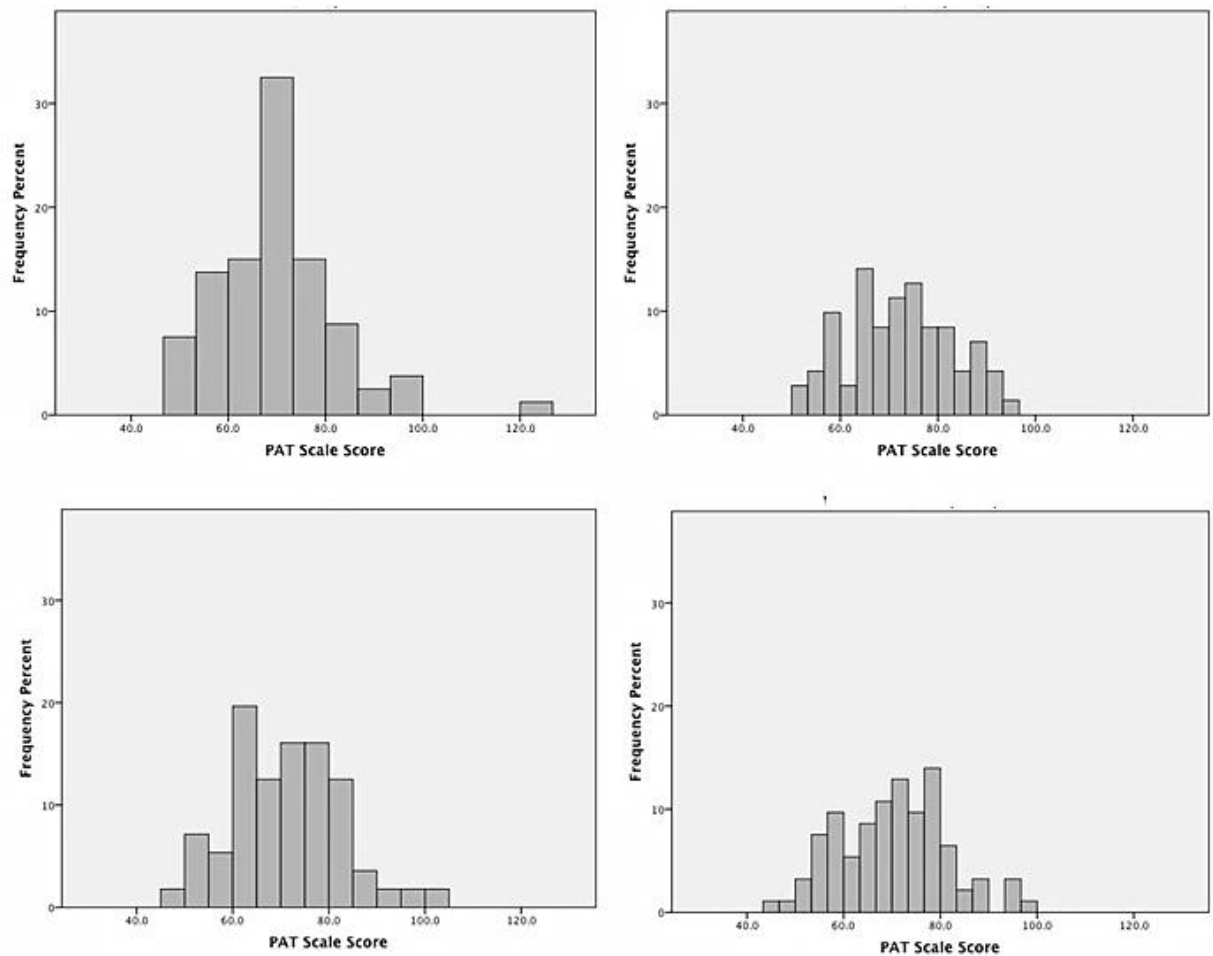


Figure 4.5. Histograms of PAT reading comprehension achievement for year nine cohort of Mountainview High School (top left). PAT reading comprehension achievement for year nine sample (top right). Histogram of PAT reading comprehension achievement for year ten cohort of Mountainview High School (bottom left). PAT reading comprehension achievement for year ten sample (bottom left).

The internal and external attribution measurement scales are not constrained to be uncorrelated, unlike the principal components analysis. Surprisingly however, the internal and the external attribution scores *were* uncorrelated ($r = 0.1$),

indicating that they reflect separate constructs rather than two extremes of a continuum.

The correlations for the Time one data, are presented in Table 4.2. There was a moderate positive correlation ($r = 0.43$) between students' e-asTTle and PAT reading comprehension results. The lack of a stronger correlation between the two tests might be due to the differences in test format. The PAT contains multiple-choice questions only, which test basic comprehension and inference from text, and which is administered with a booklet and answer sheet. The e-asTTle tests also test basic comprehension and inference from text, and additionally vocabulary and reading strategies, using a mixture of multiple-choice and short answer questions, administered online.

Table 4.2. *Pearson's r* correlation attributions and reading comprehension of baseline sample. Significant correlations indicated in boldface.

	PAT scale score	Internal attribution	External attribution
e-asTTle scale score	.43	.17	.24
PAT scale score		.07	.06
Internal attribution			.01

The modest positive correlation ($r = 0.24$) between the external attribution scale location and e-asTTle indicates that students who are more successful at reading, as measured by e-asTTle, tend to make external attributions for reading success; that is, they consider factors such as a teacher's help, the difficulty of the text or their enjoyment of the topic to be responsible for their success. There was no substantial correlation between the external attribution factor and the PAT ($r = 0.06$).

The weak but significant correlation of the internal attribution factor with e-asTTle ($r = 0.17$) indicates that students who are more successful at reading, as measured by e-asTTle, also tend to make internal attributions for their performance;

that is, they consider factors such as how hard students work, whether or not they are smart and whether they have strategies to help them to make sense of what they read to be responsible for their success in reading. As with the external attribution factor, there was no significant correlation between the internal attribution factor and the PAT test ($r = 0.07$).

Correlations between reading comprehension measures and attribution measures were also differentiated by gender. Table 4.3 shows the results of these analyses. A moderate and significant positive correlation for male students ($r = 0.35$) between the scale locations for external attribution and e-asTTle, and a weak positive correlation for female students ($r = 0.17$), indicating that for male students, external attributions are more closely aligned with reading as measured by e-asTTle.

Female students showed a marginally greater correlation than male students between e-asTTle and the scale locations for internal attribution ($r = 0.20$ compared with ($r = 0.15$) indicating that female students are a little more likely than male students to attribute their reading success to internal factors.

Table 4.3. *Pearson's r* correlation attribution and reading comprehension disaggregated by gender. Significant correlations indicated in boldface.

Male students	PAT scale score	External attribution	Internal attribution
e-asTTle scale score	.44	.17	.20
PAT scale score		0	.03
External attribution			.08
Female students			
e-asTTle scale score	.42	.35	.15
PAT scale score		.15	.13
External attribution			-.07

To further probe the differences between male and female students' attributions, additional correlations were determined, to identify relationships between attribution and the individual questions of the RAS. These were conducted using *Spearman's ρ rank-order correlation coefficient* because the RAS data was ordinal in nature.

As shown in Table 4.4, Question 2 of the RAS, "*when I understand what I read, it is usually because I am smart,*" correlates positively and significantly with performance in e-asTTle and PAT for both genders, indicating that, for all students, reading success is closely aligned with the internal attribution of ability. The male students' significant correlations ($\rho = 0.41$ for e-asTTle and $\rho = 0.36$ for PAT) are somewhat stronger than those of the females ($\rho = 0.25$ for e-asTTle and $\rho = 0.28$ for PAT).

Comparable to the males, the female participants' e-asTTle achievement also correlated positively ($\rho = 0.14$) with Question 3, "*when I understand what I read, it is usually because I use strategies*".

Both genders showed a significant correlation between e-asTTle and Question 4 of the RAS (males $\rho = 0.38$ and females $\rho = 0.25$), "*when I understand what I read, it is because my teacher helps me,*" indicating that for all students reading success, as measured by e-asTTle, is more closely aligned with the external attribution of seeking a teacher's help. The correlation between this question of the RAS and the PAT test is positive and modest, but not as substantial in its correlation with e-asTTle.

The male participants' e-asTTle achievement correlated more substantially than the females' with RAS Questions 5 ($\rho = 0.17$) and 7 ($\rho = 0.19$) which also probe external attributions.

Question 3 of the RAS, "*when I understand what I read, it is usually because I use strategies,*" did not correlate significantly with either PAT or e-asTTle, for either gender.

Table 4.4. Spearman's rho correlations reading comprehension measures and RAS questions disaggregated by gender. Non-significant correlations omitted.

	PAT (Male)	PAT (Female)	e-asTTle (Male)	e-asTTle (Female)
1. When I understand what I read, it is usually because I work hard.				
2. When I understand what I read, it is usually because I am smart.	.36	.28	.41	.25
3. When I understand what I read, it is usually because I use strategies.				
4. When I understand what I read, it is usually because my teacher helps me.			.38	.25
5. When I don't understand what I read, it is usually because I didn't like the topic I was reading about.				
7. When I don't understand what I read, it is usually because the material is too difficult.				

4.2 Intervention Data

4.2.1 Differences in reading achievement over time by group

A repeated-measures analysis of variance (ANOVA) was conducted to identify any effect of the interventions on reading achievement. More specifically, the mean scores for e-asTTle reading achievement, for both the treatment and comparison groups disaggregated by gender, were analysed to identify any changes after the introduction of each of the reciprocal teaching and attributional-retraining at different stages of the intervention. The analysis had time (four levels) as a within-subjects factor and group (two levels: treatment and comparison) and gender (two levels: male and female) as between-subjects factors. While an overall main effect of gender on e-asTTle achievement was identified; $F(1, 32) = 6.13, p < .05$, there were no significant two-way interactions, and no significant three-way interactions, all $F < 1$. Because of the lack of such interactions, the data in Figure 4.6 are aggregated across gender.

Figure 4.6 shows the mean e-asTTle reading achievement of each group over the four data-collection points. The groups' e-asTTle means varied significantly over time; $F(2.4, 78) = 8.65, p < .05$, and there was also a significant interaction between time and group; $F(2.4, 78) = 4.75, p < .05$. The conditions of sphericity were violated

for this ANOVA therefore the Greenhouse-Geisser corrected tests are reported ($\varepsilon = .822$).

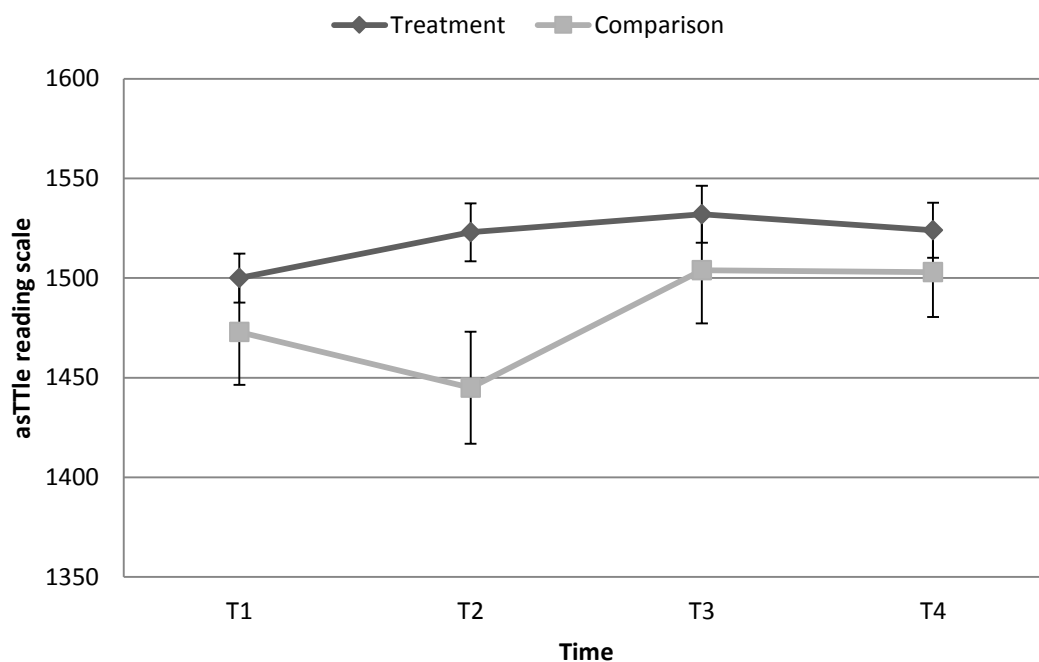


Figure 4.6. Means of e-asTTle reading achievement disaggregated by time and group. Error bars represent the standard error of the mean.

The main effects of time and group on e-asTTle scores, and the nature of the interaction between time and group, were explored with *t*-tests for independent samples, conducted to investigate differences between the groups at each time point. There was no significant difference between the treatment and comparison groups at three of the four time points: Time one, $t(21) = .91, p = .37$; Time three, $t(23) = .94, p = .36$; or Time four, $t(35) = .83, p = .41$. However, at Time two the mean for the treatment group was significantly greater; Time two, $t(23) = 2.5, p = .02, d = .89$. For the *t*-tests conducted at Times one, two and three Levene's test for equality of variances was found to be violated, and the *t* statistic not assuming homogeneity of variance was therefore used.

While both groups tended to improve in their e-asTTle reading scores overtime, there remain some interesting patterns in their reading achievement. For

example, the mean for the comparison group appears to have decreased dramatically between Times one and two, which probably explains the interaction in the ANOVA. A paired-samples *t*-test showed that this decrease was significant; $t(15) = 2.16, p = .05, d = .70$. This decrement does not, however, explain all of the interaction in the ANOVA; a paired-samples *t*-test also showed a significant increase in the treatment group's e-asTTle achievement between Times one and two: $t(19) = 2.83, p = .01, d = .39$.

These data are not conclusive in regard to the hypothesis that the two-staged intervention would improve reading comprehension in the treatment group. The significant difference in the e-asTTle reading means of the treatment and comparison groups after the first stage of the intervention, in which the reciprocal teaching programme was introduced, is confounded: Because the treatment and comparison groups had different teachers, it is not clear what may have contributed to this decrease in reading achievement.

With no significant difference between the treatment and comparison groups at Time three, immediately following the introduction of attributional-retraining; $t(23) = .94, p = .36$, these data do not support the hypothesis that reciprocal teaching overlaid with attributional retraining would significantly improve the reading comprehension of the treatment group compared with the comparison group.

4.2.2 Differences in attributional views over time

Repeated-measures ANOVA were conducted to try to identify whether or not there was any significant difference in students' internal and external attributions between the treatment and comparison groups, or between genders over time. Each analysis had time (four levels) as a within-subjects factor, and group (two levels: treatment and comparison) and gender (two levels: male and female) as between-subjects factors. Figure 4.7 shows the means of the internal attribution scale locations for each group and gender over the four time points.

The groups' internal attribution means did not vary significantly as a main effect of time; $F(2.3, 72.8) = 1.18, p = .32$, nor of gender; $F < 1$. They did however,

vary with marginal significance as a main effect of group; $F(1, 32) = 3.44, p = .07$. There was no interaction between the main effects of time and group; $F < 1$, nor any interaction between the main effects of time, group and gender; $F < 1$. The conditions of sphericity were violated for this ANOVA therefore the Greenhouse-Geisser corrected tests are reported ($\varepsilon = .778$).

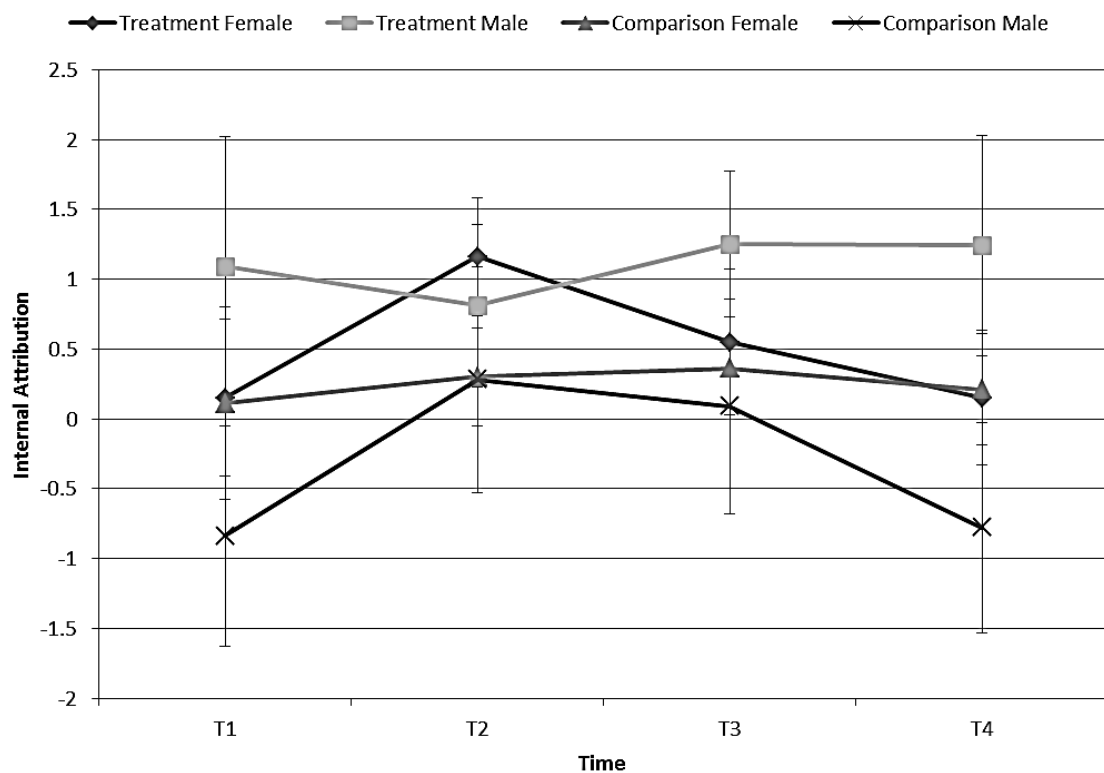
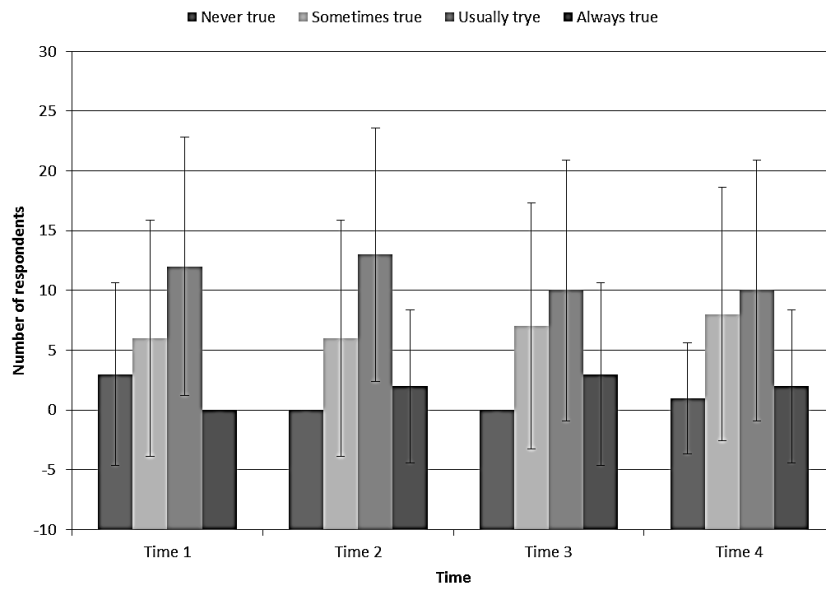


Figure 4.7. Means of internal attribution scale location disaggregated by time, gender and group. Error bars represent the standard error of the mean.

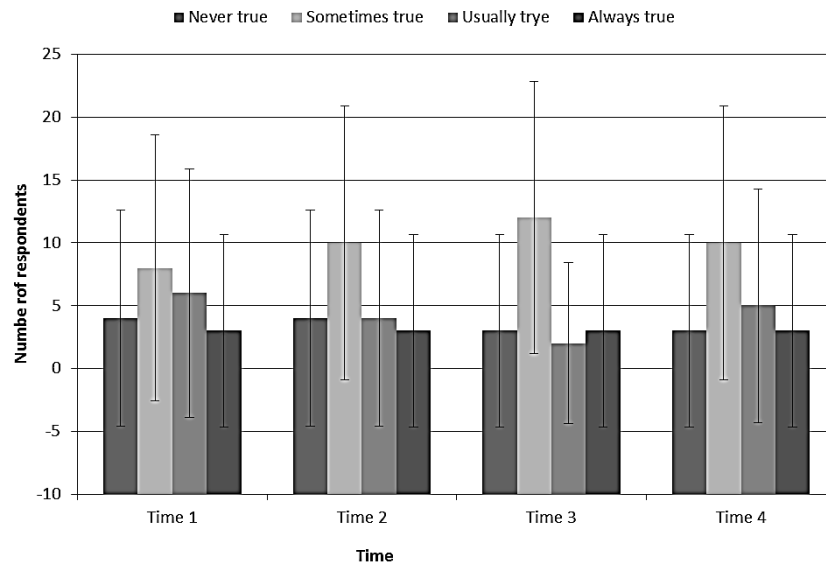
Of the three questions that make up the internal attribution portion of the RAS, two questions (Question 1 and Question 2) target the supposedly dichotomous attributions of effort and ability. It was hypothesised based on Dweck and colleagues' (Blackwell et al., 2007; Dweck, 1999, 2008; 1983) theory, that if the attributional-retraining intervention was successful, then students in the treatment group would move more than the control group over time towards a stronger internal attribution.

Notwithstanding the results of the principal components analysis, Questions 1 and 2 are targeting different aspects of internal attribution and may therefore cancel out any overall change in internal attributions over time between groups. If, for example, students' responses to Question 1 were more positive but their responses to Question 2 were more negative. This could explain the lack of treatment effect on the treatment group's internal attributions over time as seen in Figure 4.7.

To test this, Chi-square tests were conducted to establish overall changes in the groups' responses to the three internal questions from the RAS. Results indicated that neither the treatment or comparison groups responded significantly differently to the individual questions at the different time points as shown in Figures 4.8a and 4.8b. In all instances the Chi-square was less than the critical value (16.92).

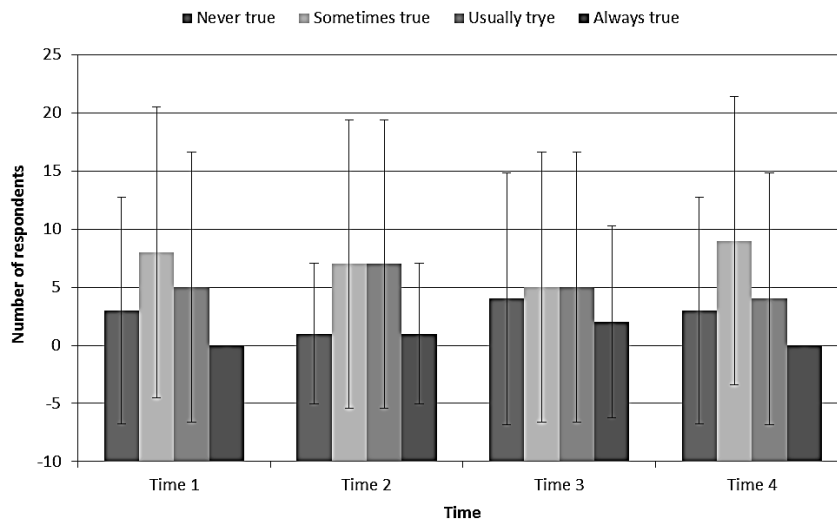


Question 1: When I understand what I read, it is usually because I work hard.

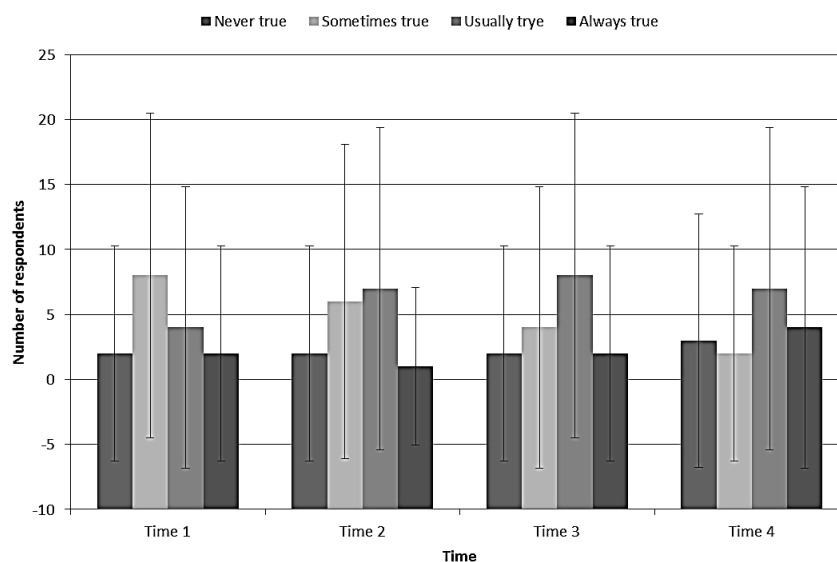


Question 2: When I understand what I read, it is usually because I am smart.

Figure 4.8a. Treatment group's responses to RAS Question 1 (top) & 2 (bottom) disaggregated by time. Error bars represent the standard error of the proportion.



Question 1: When I understand what I read, it is usually because I work hard.



Question 2: When I understand what I read, it is usually because I am smart.

Figure 4.8b. Comparison group's responses to RAS Question 1 (top) & 2 (bottom) disaggregated by time. Error bars represent the standard error of the proportion.

Figure 4.9 shows the means of the external attribution scale locations for each group and gender over the four data-collection points. While there appears to be a marked decrease in the means of the external attribution scale locations of each gender within each group from Times one to four, in fact this main effect of time is only marginally significant; $F(3, 96) = 2.31, p = .08$. In addition, there was no main effect of group; $F < 1$, or gender; $F < 1$. Neither was there an interaction

between the main effects of time and group; $F < 1$ nor between time, group and gender; $F < 1$.

The use of t -tests for independent samples comparing the means of the treatment and comparison groups at each data-collection point confirmed this finding as there was no significant difference between the groups at any time: Time one, $t(35) = .62$, $p = .54$; Time two, $t(35) = 1.55$, $p = .13$; Time three, $t(34) = .38$, $p = .70$; Time four, $t(23.4) = .08$, $p = .94$. These data also disconfirm the hypothesis that the treatment group would make fewer external attributions for their reading performance compared to the comparison group over time. In fact, it is interesting to note that between data-collection points two and three (immediately after the attributional-retraining stage of the intervention) the external attribution scale locations *decrease* for both genders of the treatment group as hypothesised, although the difference is not significant.

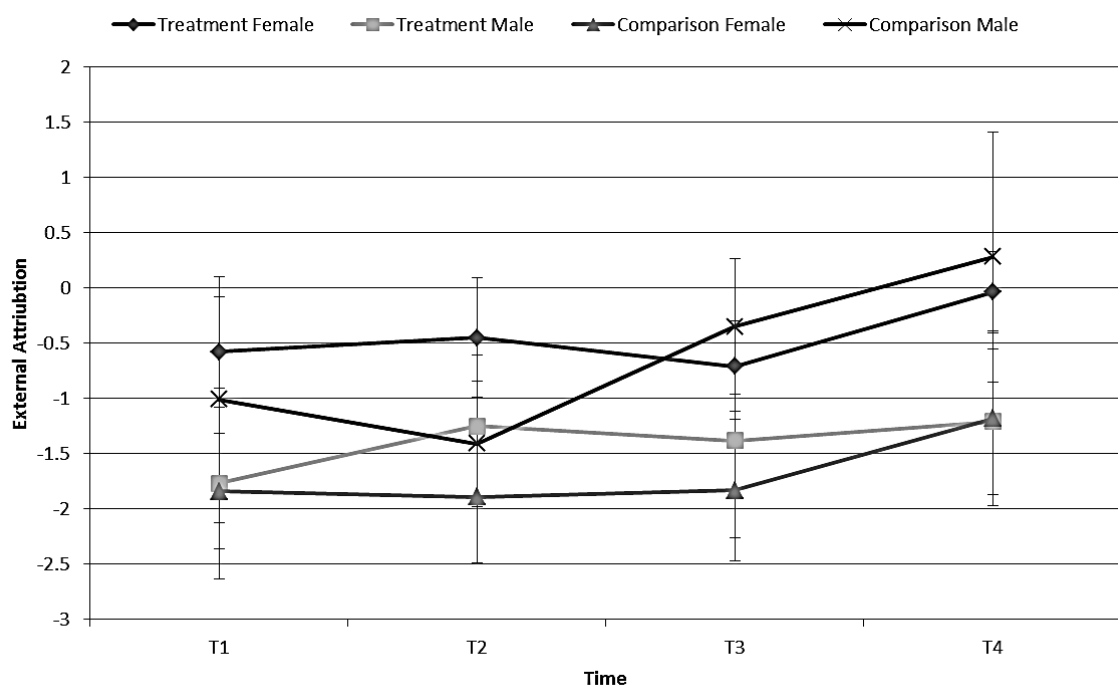


Figure 4.9 Means of external attribution scale location disaggregated by time, gender and group. Error bars represent the standard error of the mean.

Chapter 5: Findings from the Qualitative Data

In mixed methodology research, quantitative data provides a statistically generalised understanding of a problem whereas qualitative data provides a detailed understanding of a problem from examining the experiences of individuals (Creswell & Plano Clark, 2011). The qualitative data in this study supports some aspects of the quantitative findings and challenges others.

All names included in this chapter are pseudonyms, used to protect the identity of the students involved in this study.

5.1 Profile of Interview Participants in Relation to the Baseline Sample

Of the students who consented to be interviewed, six (three boys and three girls) were chosen based on their February 2012 PAT scores to represent a broad spectrum of reading comprehension achievement. The sample was designed in this way to offer opportunities to contrast readers at different achievement levels, and of each gender. Because there were a limited number of students from the treatment group who consented to be interviewed, in order to get the broadest spectrum of reading achievement it inadvertently confounded gender and ability, whereby the lowest achieving readers were male students and the highest achieving readers were female students. Table 5.1 provides an overview of the details of each interview participant.

For the purposes of this study, the word ‘ability’ has not been used to define students’ reading achievement level because in this in this case ‘ability’ is a common dimension of attribution theory which students were discouraged from using in the attributional-retraining intervention. Therefore, the six interview participants are defined as being: ‘low-comprehenders,’ meaning that their baseline PAT achievement was between Stanine 1 and Stanine 3 – the first to the twenty-second percentile; ‘average-comprehenders,’ meaning that their baseline PAT achievement was between Stanine 4 and Stanine 6 – the twenty-third to the seventy-sixth percentile; ‘high-comprehenders,’ meaning that their baseline PAT achievement was

between Stanine 7 and Stanine 9 – the seventy-seventh to the one hundredth percentile.

Table 5.1. Summary of interview participants.

	Name	Gender	Ethnicity	PAT Stanine Feb '13
Low	Brian Andrews	M	Pakeha	2
	Freddie Munro	M	Pakeha	3
Average	Philip Newman	M	Maori	4
	Ingrid Flaven	F	Maori	5
High	Kate Zimmerman	F	Maori	8
	Yvette Adams	F	Pakeha	7

The six interview participants were plotted with the rest of the baseline cohort in terms of their attributional views before either of the intervention stages. As shown in Figure 5.1, as much as can be seen with only six students, the interview participants are diverse in their attributional views and are representative of the diversity in baseline cohort.

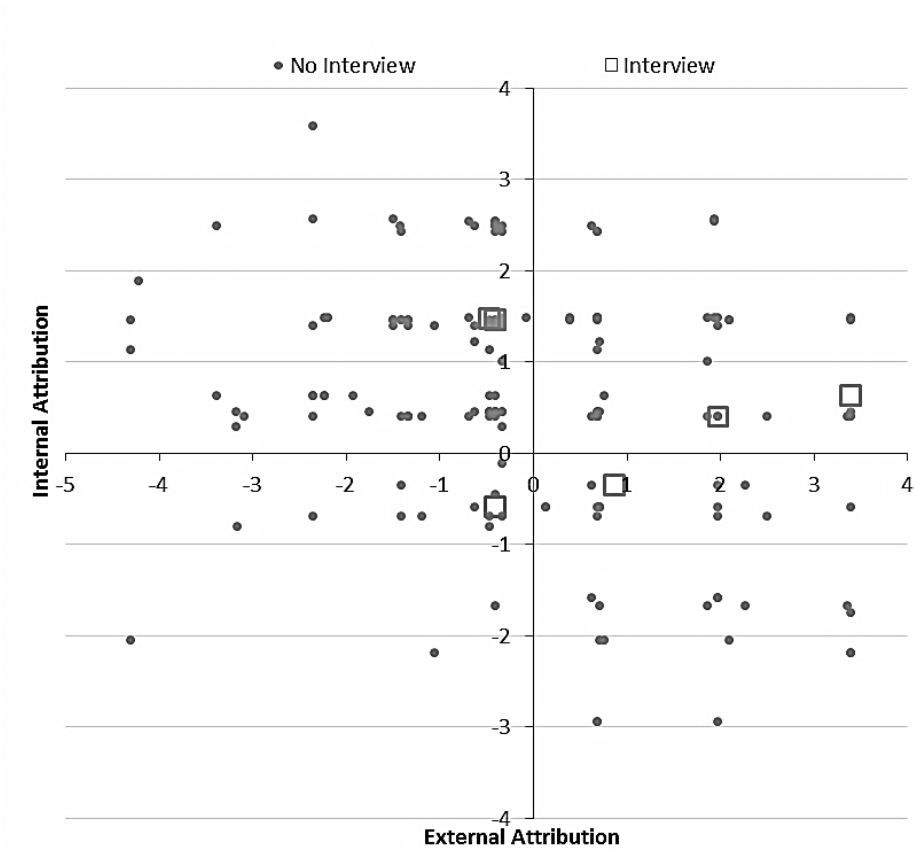


Figure 5.1. Scatter plot of baseline sample’s internal and external attribution scale locations with the six interview participants identified.

5.2 Field Observations

The field observations of both the reciprocal teaching and attributional-retraining stages of the intervention showed improvement in students' engagement and participation, as well as the development of authentic learning communities within their reciprocal teaching groups.

5.2.1 Field observations of reciprocal teaching intervention

The treatment class responded well to the reciprocal teaching intervention. After two whole-class training sessions of reciprocal teaching, students were impatient to work in their reading groups. While collaborative learning opportunities had been utilised previously in this class, they had never been used as an opportunity to read and make sense of text. Students were observed to be highly motivated with very little off-task behavior which was not usual for this class.

There was a rapid uptake of the strategy with students carefully following the processes of reciprocal teaching using the prompt cards. Only one group required correcting and prompting about how to follow the process and how to interact with their peers. As the classroom teacher, I was surprised at how quickly I felt redundant; the demands on my time quickly reduced as students consulted peers or reference materials for an answer. It was not long into the intervention period before groups felt confident enough that they began to make amendments to the reciprocal teaching process to take ownership of it. These amendments included: not following the simulated language of the prompt cards; reading and working with more than one paragraph at a time; amalgamating several strategies together, for example using the words/phrases that were clarified as a part of the summarisation process.

The reading groups were observed to provide a safe learning environment in which students felt comfortable to ask questions that they may not have felt comfortable to ask previously. This exchange between two group members shows a student obtaining an answer to a question that had obviously been bothering him for a while:

Brian: What does *generally* mean?

Anna: The opposite of *specifically*.

Brian (later): What is *specifically*? I've never known.

Anna: *Specifically* is where you talk about an actual thing but *generally* is where you talk vaguely about a lot of things.

Overall, the interactions within the groups were positive: Two students, who were on the periphery of the class socially, were always observed to be included and involved in the process; low-comprehenders were not reluctant about seeking or receiving help from their peers. This example shows a female high-comprehender helping a male low-comprehender to improve his questioning of the text:

Harry: Who was the president of the USA?

Karlee: When?

Harry: Who was the president of the USA in 1961?

Karlee: Boom!⁴

The collaborative nature of reciprocal teaching also provided situations in which people could assume the expert role when they would not usually, such as vocabulary solving opportunities. For example, when reading a text about cold water survival a student asked about the logistics of the huddle position and whether or not you could be eaten by sharks when you were in the huddle position. Philip, a quiet student who rarely contributes, shared his knowledge of sharks and how they eat seals; which is why they sometimes mistake surfers for seals and bite them; and from that inferred that he did not think you would be eaten in a huddle position. In this example, Philip contributed information that no-one else could have, and answered his peer's question, putting him in the unusual position of being an expert.

5.2.2 Field observations of attributional-retraining intervention

The treatment class also responded well to the attributional-retraining intervention. The first activity in the attributional-retraining intervention was a

⁴ "Boom" is a current adolescent colloquialism that means something akin to 'well done' or 'great job'.

presentation that I gave to the class introducing the concept of attribution and how individuals' attributions can be changed. Students were attentive and showed their interest in this new way of thinking by asking a range of engaged and valid questions.

During the second activity in which groups of students had to discuss some hypothetical scenarios and identify the attributions being made, the groups were observed eagerly discussing the scenarios. The groups confirmed their attentiveness to the earlier presentation by quickly and accurately labeling the attributions demonstrated in each scenario.

The third activity was a talk from the Head Boy and Head Girl, Brad and Aurelia, who discussed attributions without jargon and applied them to scenarios that the treatment group was familiar with, such as sports teams and passing the school's junior level qualification. Again, students were attentive and asked valid questions. Only one student had to be spoken to for off-task behavior and not paying attention.

During the intervention phase, the shift in the way in which students talked within their reciprocal teaching groups indicated a change in the language used consonant with attributional-retraining. During the second stage of the intervention, I anticipated that I would have to conduct micro-interventions through verbal feedback to help some students change their attributions of reading performance and their participation in reciprocal teaching. Unexpectedly, this was taken up by a number of students in the treatment group who were observed giving others feedback to change the dimensionality of their internal attributions (from stable and uncontrollable ability attribution to a unstable and controllable effort attribution). In situations in which it appeared that their peer was going to give up on their role in reciprocal teaching – a characteristic of an entity (internal, stable and uncontrollable) mindset - feedback was given to encourage that student to persevere with the task, with the intention of changing the stability and controllability of the internal attribution. This example shows peers not only trying to encourage one another but correcting other students' behaviours that they did not consider encouraging:

Xavier: ...peanut cakes.

Hannah: (laughing) It's peanut cubes, not cake!

Amelia: Don't laugh – he had a go!

Claire: Don't discourage him. It's great you're making an attempt Xavier.

In this example, Claire demonstrates praise for effort and Amelia censures Hannah for behavior that may discourage Xavier from making an effort. These messages are consistent with Mueller and Dweck's (1998) research on the differing motivational effects of student praise. Without being taught about the differences in praising effort versus praising ability, these students seem to have picked up on this message from micro-interventions they had observed.

5.3 Time One Interviews

5.3.1 Reading backgrounds of interview participants

During the interviews at the first data-collection point, a range of questions were asked to provide some background information that may explain the students' reading behaviours and their reading achievement.

Students were asked a range of questions about: reading in other subjects; reading outside of school; the reading practices of their families; and the availability of reading material in their homes. Some research suggests that the amount of independent reading done by a student, as well as home influences such as the amount of reading material at home and seeing family members engaging in reading, are likely predictors of reading success (for example, Bintz, 1993; Cunningham & Stanovich, 1991; Flockton & Crooks, 1997; Hughes-Hassell & Rodge, 2007; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991).

Students were also asked about how they saw themselves as readers and whether or not that was dependent on anything. Some research shows that students' *perceived academic competence* affects classroom achievement and is closely linked to the attributions students make for their successes or failures (Gonida et al., 2006; Schunk, 1989). Closely linked to students' perceived academic competence is their expectancy of reading success; that is, how well they think they

will do on a reading task. Students were asked whether or not they believed they could improve at reading while they were at secondary school and what they thought would help them to improve.

In anticipation of the reciprocal teaching intervention which would occur immediately following the first data-collection point, students were also asked *“what sort of things do you do while you are reading to help you understand”* to establish what they knew about reading strategies and whether or not they used any currently. The decision was made not to use the label of “reading strategy” as this jargon may have been off-putting and could have inhibited students’ answers.

Reading background of Brian Andrews (low-comprehender)

Brian was a socially aware young man who was a reluctant reader. His behavior in class was characterised by good relationships with his peers; often seeming as if socialising was his priority in class. Brian frequently requested help with his reading, although these requests were covert in manner, to avoid drawing attention to the fact that he needed help.

From the responses he provided at the first data-collection point interviews, at home Brian read magazines and instructional materials, such as how to repair a motorbike, as well as reading websites. Brian had access to a range of reading materials at home; regularly saw his family-members engaging in reading and was encouraged to read by his family.

Brian responded that he did understand what he read although he lacked confidence in his response. This lack of confidence was corroborated by the almost resigned fashion in which he described his reading ability as: “not that, like good.” When his self-perception was probed for a reason why, Brian responded that it was to do with his enjoyment of reading: “cause I don’t really enjoy it that much.”

When asked about his expectancy of success, Brian responded that “hopefully” he could get better at reading at high school. While this was a positive expectation, this response similarly lacked confidence, suggesting that he was not completely convinced that he could improve his reading. He was however, confident that reading more books would be the thing to help him improve his reading. The

lack of confidence in his response was supported by the fact that he believed he was best at reading in primary school because that was the last time that he did not find it difficult.

Brian was not strategic in his reading behavior. He responded that he used skimming and scanning strategies to get the gist of the text without having to read it in its entirety. Brian did not elaborate on his answer or provide examples; the manner in which he responded suggested that there was an element of guess-work involved.

Reading background of Freddie Munro (low-comprehender)

Freddie was an earnest young man who was eager to do well and eager to please the teacher. He had cordial relationships with many of his peers and his behavior in class was always compliant. Freddie struggled with reading and was active about seeking help with it.

From the responses he provided at the first data-collection point interviews, at home Freddie read young-adult novels and was able to discuss examples of what he had read recently. Freddie had access to a range of reading materials at home; regularly saw his family-members engaging in reading and was encouraged to read by his family.

Freddie responded reasonably confidently that he did understand what he read. He described his reading ability in a similarly optimistic way, as: “like okay at reading.” When his self-perception was probed for a reason why, Freddie responded that it was to do with his enjoyment of reading: “sometimes I like to read in my own time.”

Freddie put a caveat on his expectation for success while at secondary school; that is, that reading more books would indicate an improvement in his reading. Although he set high expectations for himself, the tone of Freddie’s response suggested that he was optimistic about achieving it. This was also supported by the fact that he believed the present day was when he was the best at reading.

Freddie was not particularly strategic in his reading behavior. He responded that he tried to visualise words that he did not understand to work out their meaning while reading however, Freddie was not able to elaborate on the process or provide an example and he seemed a little confused about his strategy.

Reading background of Philip Newman (average-comprehender)

Philip was a quiet young man who did not appear to struggle with reading. He never asked for help with reading. Philip had strong relationships with his peers although he was not influenced by his peers; his behavior in class was compliant.

At the first data-collection point interviews, Philip responded that he did not read at home. With further probing, he responded that he read online material in his own time such as Facebook and the comments on Youtube videos. Philip saw his family reading magazines intermittently and had limited access to reading material at home, that is, his father's fishing magazines and community newspapers.

Philip responded unconfidently that he did usually understand what he read. He also described his reading ability in a particularly despondent manner: "not that good ... I'm not a very good reader;" providing the justification for his negative self-perception that: "because when I read I can't remember it once I've read it." Philip's negative self-perception is supported by the fact that he believed that he was the best at reading at primary school because that was the last time that he enjoyed reading.

Philip responded in a similar manner when asked about his expectancy of success at secondary school; he responded positively, "yep" but his tone of voice conveyed a lack of confidence. The response that he provided for the second half of the question was much more confident and seemed to be based on reading difficulties that he had experienced:

Researcher: What do you think will help you to get better?

Philip: um like reading more, and like spelling, like learning more hard words then I won't have to like, stop and like, skip the word.

Philip was not strategic in his reading; he was not aware of any strategies that he used while reading.

Reading background of Ingrid Flaven (average-comprehender)

Ingrid was a lively young lady who was engaged with all aspects of English, including reading. She sought help with reading only when necessary. Ingrid had strong relationships with her peers although her behavior in class was compliant; not influenced by her peers.

At the first data-collection point interviews, Ingrid was enthusiastic about reading at home, referring to many examples of young-adult survival novels that she had read recently and even the fact that she was trying to write her own survival novel. Reading seemed to be a part of the fabric of Ingrid's home life, she described having recently bought her step-father a book for Father's Day, and while she did not have access to a lot of reading materials at home she described the extensiveness of the local library.

Ingrid responded that she did usually understand what she read. She also had a confident self-perception of her reading ability, describing herself as a "pretty good" reader and attributed that ability to her enjoyment of texts: "um, I like to read so I think I'm pretty good at it if I get into a book."

Ingrid had a clear and confident expectation of success in reading at secondary school and she was definite that reading more would help her to improve her reading, in addition to reading bigger books. This optimism was present also in her believe that the present day is when she was the best at reading.

Ingrid described her strategy of seeking external clarification for words that she was unsure of in a similarly confident manner.

Reading background of Kate Zimmerman (high-comprehender)

Kate was a socially aware young lady who seemed to have had a lot of influence within the class. She was much more highly achieving than her friendship group. Kate was compliant and completed reading tasks without seeking help.

From the responses she provided at the first data-collection point interviews, Kate read a variety of novels, magazines, Facebook and digital media at home and had access to a lot of reading material. She described her mother as “always reading.”

Kate responded modestly that she usually understood what she read. Her self-perception of her reading ability was similarly modest: “I think I’m pretty good” but logically considered, “Some of the other people my age that I hang around with aren’t very good readers like, they don’t understand some of the words that I can like read.” She described her self-perception as being dependent on enjoying the text or choosing it herself: “... when we’re given something specific to read it’s kind of like hard to get into it if it’s not your sorta style – to read it.”

Kate had a similarly modest but positive expectation of success at secondary school: “yeah I think I could” although she was not sure what would help her to improve her reading. Interestingly, she believed that primary school was when she was best at reading because that was the last time that she worked hard at it.

Kate read strategically. She was confident in her conscious use of re-reading parts of a text to clarify words and phrases, and to ensure that she had understood the text.

Reading background of Yvette Adams (high-comprehender)

Yvette was a lively young lady who was engaged with all aspects of English, including reading. She rarely sought help with reading, but would do so when necessary. Yvette had strong relationships with her peers and the majority of her friendship group comprised high-achieving students.

At the first data-collection point interviews, Yvette read a variety of novels, magazines, Facebook and digital media at home and she had access to a lot of reading material. Yvette, her brothers and mother had all recently read a number of the same novels so they could discuss them.

Yvette responded confidently that she usually understood what she read but was a lot more modest in her self-perception of her reading ability: “um, alright, yeah.” She also provided text enjoyment as a reason for her self-perception: “if the

book isn't interesting at the start then I don't like reading it." Yvette also had a similarly modest but positive expectation of success at secondary school: "yeah, probably;" she was however, very clear about what would help her to improve her reading: "reading more, cause that can help ... just knowing more words." This expectancy of reading success is supported by her belief that her reading ability has progressively improved over the course of her schooling and that at no point was she better at reading than she is now.

Yvette was not aware that she read strategically. Initially answering that she did not consciously use any strategies when reading:

Yvette: ... normally I would just read through it and not think about it, I'll just read it.

Yet in her response to the very next question, she described the use of context clues, a well-known reading strategy for working out unknown vocabulary (Ali, Mukundan, Ayub, & Baki, 2011; Flanigan & Greenwood, 2007; Graves, Juel, & Graves, 2004):

Researcher: When some of the words are hard to read, do you keep reading or do you give up?

Yvette: I just keep reading... I'll look at it and be like, I wonder what it is, and then I'll just read on and it'll become clear from what I'm reading around it.

5.4 Time Two and Three Interviews

5.4.1 Experiences with reciprocal teaching and changes in self-perception

During the interviews at the second and third data-collection points, a range of questions were asked to probe the interview participants' experiences with the reciprocal teaching intervention.

Students were asked about two of the strategies incorporated in reciprocal teaching; whether or not they could explain the process; and whether or not they had used the strategy in another situation (transfer). They were also asked about

their unique experiences with reciprocal teaching; whether it helped their reading comprehension performance; and what they thought it was about reciprocal teaching that was helpful to them.

Brian's experience of reciprocal teaching

At the second data-collection point, Brian expressed some confidence in his experiences with reciprocal teaching. He was able to correctly articulate the process of making predictions about a text and he reported finding the strategy easy. When asked if he had used the strategy in another situation, he responded that he had but was unable to substantiate his answer. Brian was then asked about the strategy of summarising. He acknowledged that he found this strategy harder than making predictions which was substantiated by the fact that he had difficulty in describing the process of summarising text. He did not use summarising in other situations.

Brian responded that he found reciprocal teaching a helpful strategy that assisted in his reading comprehension. He elucidated that it was the ability to discuss with the group things that he did not understand that was the reason he found reciprocal teaching helpful. Brian maintained this view after the addition of attributional-retraining to the intervention; again commenting on the supportive nature of the group as well as the collaborative learning opportunities it provided as the reason why he found reciprocal teaching helpful:

Brian: It was just good being in a group because people don't really care if you get something wrong so they just help you out and stuff.

Freddie's experience of reciprocal teaching

Freddie lacked confidence in his initial experiences with reciprocal teaching. He was able to correctly articulate the process of making predictions however, he reported that he did not find the strategy easy. He explained that he found it difficult because he was always concerned about having the correct answer.

Freddie was not confident about the strategy of asking questions from the text. He did however, hesitantly answer that he used questioning in other situations but was unable to substantiate this. This appears to be a compliance response where

Freddie answered with what he believed was an appropriate answer rather than providing an honest account of his experience.

Despite lacking confidence in his initial experiences with reciprocal teaching, Freddie responded that he did find reciprocal teaching a helpful strategy that assisted in his reading comprehension. He described the fluency of other readers as the reason why he found it helpful; when he heard something read fluently he was better able to understand it. Freddie maintained this view after the addition of attributional-retraining to the intervention.

Philip's experience of reciprocal teaching

Philip was not present for the interviews at the second or third data-collection points.

Ingrid's experience of reciprocal teaching

Ingrid responded positively about her initial experiences with reciprocal teaching. She was able to correctly articulate the process of making predictions about a text and reported that she found the strategy easy. She also described how she used the strategy of making predictions to help her when choosing books for her personal reading. Ingrid was also asked about the strategy of asking questions of the text. She reported finding the strategy easy when working with a group however, she was unable to substantiate this, describing the process of clarifying words/ideas instead.

Ingrid responded that she found reciprocal teaching a helpful strategy which assisted in her reading comprehension; the reason she provided for the helpfulness of this strategy was the opportunities to discuss the text and things she did not understand from it. Ingrid maintained this view after the addition of attributional-retraining to the intervention; again commenting on the collaborative learning opportunities provided by the group as the reason why she found reciprocal teaching helpful:

Researcher: Do you think it was a helpful process?

Ingrid: Yes, I find it very helpful.

Researcher: Why is that?

Ingrid: Because it helps us to understand it, and so we don't feel alone, and we don't have to read by ourselves and not understand it and then just forget about it.

Kate's experience of reciprocal teaching

Kate's initial experience with reciprocal teaching was largely positive although she reported feeling easily bored with the activity. She confidently articulated the process of making a prediction and, rather astutely, responded that the ease of making a prediction was dependent on the clarity of the text features present. She also responded confidently about the strategy of summarising. Kate reported finding it easy, described the process accurately and then described how she used it in social studies:

Kate: We'll usually highlight, like main points and then summarise what that paragraph was about.

Kate found that reciprocal teaching was a helpful strategy that assisted with her reading comprehension. She also considered the collaborative nature of the group beneficial however, unlike the other students, she responded that it was only beneficial if it was not a group made up of her friends that would distract her. Kate maintained this view after the addition of attributional-retraining to the intervention and made the interesting observation that reciprocal teaching allowed her to take an expert role and help students who were weaker at reading comprehension than she was. While this was the intention of Palincsar and Brown (1984) creating heterogeneous groups in their Experiment 1, this was never made explicit to the students in the treatment group.

Yvette's experience of reciprocal teaching

Yvette was unconvinced about reciprocal teaching after her initial experiences. She was easily able to articulate the process of making predictions

about a text and reported finding the strategy easy. She did not however, use the strategy in other reading situations. Similarly, Yvette found the strategy of asking questions of the text easy but when asked if she used had used the strategy in other situations she was quite dismissive, seemingly having her own strategies for reading, or not requiring any:

Researcher: Can you think of another time when you were reading and you used questioning to help you? ...

Yvette: Um, not really, I just read.

Yvette was uncertain as to whether she found reciprocal teaching a helpful strategy. She described being a successful reader who was not conscious of what strategies she employed while she reads and as feeling easily bored by reciprocal teaching. Yvette did however, concede that the collaborative nature of reciprocal teaching was good for solving unknown vocabulary.

At the third data-collection point, after the addition of attributional-retraining to the intervention, Yvette concluded that reciprocal teaching was a helpful strategy. This was a shift from Time two where she was uncertain about its usefulness. While she did not find it helpful for her personal reading, she was able to transfer the strategies and put them to use in reading comprehension tests:

Yvette: I don't really use it when I'm reading books but when we did the e-asTTle it was helpful.

5.4.2 Changes in self-perceptions and attributions

During the interviews at the second and third data-collection points, a range of questions were repeated from the first data-collection point to identify changes in students' self-perceptions, expectancy of success and internal attributions.

Of the questions that were repeated, two questions asking about interview participants' responses to reading difficulty were included as a method of probing internal attributions. The questions were: "when some of the words are hard to read do you keep reading or do you give up?" and "what about when quite a lot of the words are hard to read?" According to Dweck's (2008) theory, if a student

persevered when faced with reading-difficulty, they would be exhibiting an internal, controllable and unstable attribution; that is, one of effort. If a student gave up instead, then they would exhibit an internal, uncontrollable and stable attribution; that is, one of ability (or a lack of).

Students were also asked about specific changes in their responses to the RAS questions over the previous data-collection points with the intention that students would be able to provide an explanation as to why their attributional views changed over time.

Brian's changes in self-perceptions and attributions

Brian's low self-perception of his reading ability showed no change at the conclusion of either the reciprocal teaching intervention or the attributional-retraining intervention. At Time two, he had become more confident in his expectation of reading success at secondary school but lost some of this confidence at Time three. Brian maintained that reading more was what was going to help him improve his reading.

When asked about his response to reading difficulty, Brian exhibited a strong effort attribution at all three data-collection points in that he would not give up reading a text if some of the words were hard to read. However, if a lot of the words were hard to read, he exhibited the opposite view; that is, that he would give up. In his responses to Question 1 of the RAS, *when I understand what I read, it is usually because I work hard*, Brian exhibited a similar effort response by responding *usually true* at each data-collection point. However, when asked to elucidate, it was clear that he had misunderstood the question and was answering based on his colloquial understanding of *hard work* rather than of working hard; that is putting in effort.

Brian demonstrated a decrease in external attributions during the intervention. He went from being a student who regularly asked for help, to a student who was often observed using the collaborative nature of the reciprocal teaching group and the clarifying strategy to work out words or ideas that he was unsure about. When asked about his changing responses to Question 6, *when I don't*

understand what I read, it is usually because I'm not lucky, he also demonstrated a decrease in external attributions (and an increase in internal attributions):

Researcher: The other question I am interested in is number six, it says “when I don’t understand what I read it is usually because I am not lucky.” The second time you said that that is “usually true” i.e.) you’re usually lucky when you understand what you read and then the next time you said that that is “sometimes true.” So, are you telling me that it is less about luck than you thought?

Brian: Yeah.

Researcher: As we went on and we did more reciprocal teaching and we learnt about attribution and working hard, you’re telling me that it’s less about luck and more about working hard, is that what you were thinking?

Brian: Yeah. You still have to learn it rather than just guessing it so you actually have to work at it.

Despite adopting a more strategic approach to reading comprehension, Brian did not obtain consistently better scores in his e-asTTle reading comprehension tests over the intervention period. Nor was his increased utilisation of reading strategies reflected in his attributions of reading performance over the intervention period, which remained persistently internal.

Freddie’s changes in self-perceptions and attributions

Freddie maintained an optimistic self-perception of his reading ability and in his expectation of reading success at secondary school at the conclusion of both the reciprocal teaching and the attributional-retraining interventions. It is possible that these answers were examples of compliance responses, with Freddie answering what he believed I wanted to hear. For example, immediately after the reciprocal teaching intervention he responded that it would be reciprocal teaching and the strategies that make it up that would help him to be successful in reading.

Freddie exhibited a strong effort attribution in his responses to the reading difficulty questions at all three time points. In his responses to Question 1 of the RAS, *when I understand what I read, it is usually because I work hard*, he exhibited a similar effort response by responding *usually true* at each data-collection point. He then went on to indicate however, that his responses were not influenced by

reciprocal teaching or attributional-retraining. Freddie was unable to elucidate on his responses to RAS Question 3, *when I understand what I read, it is usually because I use strategies*, in which his responses showed an increase in internal attribution.

Freddie demonstrated a marked decrease in his external attributions through his reading behavior. He went from being a student who often asked for help to a student who worked both collaboratively and independently using strategies. His responses to RAS Question 4, *when I understand what I read, it is usually because my teacher helps me*, corroborate this observation and attribute it to reciprocal teaching:

Researcher: Question four, *when I understand what I read it is usually because my teacher helps me*. Now in term three you said you “usually” understand what you read because the teacher helps you and that is usually true, the second time you answer you said that was “sometimes true” and the last time you answer you said it’s “never true.” Now, this is interesting because you’re saying that now, near the end of term four, you can understand what you read mostly by yourself rather than with my help. How did that come about?

Freddie: Mostly because of reciprocal teaching and library spells and maybe just at the beginning of social studies when we do free reading.

Despite adopting a more strategic approach to reading comprehension, Freddie did not obtain consistently better scores in his e-asTTle reading comprehension tests over the intervention period. Nor was his strong effort attribution reflected in his attributions of reading performance over the intervention period.

Philip’s changes in self-perceptions and attributions

Philip was not present for the interviews at the second or third data-collection points.

Ingrid’s changes in self-perceptions and attributions

Ingrid maintained a confident self-perception of her reading ability as well as confidence in her expectation of reading success at secondary school at the conclusion of both the reciprocal teaching and the attributional-retraining

interventions. She maintained that reading more and reading bigger books would be what leads to her reading success.

Ingrid's response to difficulty indicated some confusion about the distinct roles of effort and ability in reading performance. At all three data-collection points she responded negatively to the first question but indicated that she would in fact give up reading a text when a lot of the words were hard. The reasons that she provided for giving up reflected attributions to both effort and ability:

Researcher: what about when quite a lot of the words are hard to read?

Ingrid (Time 1): Yeah, cause you would just never understand it in the end, so you would wait until you know most of the words, and then you go read it again.

Ingrid (Time 2): I would save it for when I'm a bit older so I could understand it cause I might know more words.

When asked about her responses to Question 2 of the RAS, Ingrid again showed she was not completely clear in her understanding of the role of ability in reading:

Researcher: Now ... *When I understand what I read it is usually because I am smart*, the first two times you said that that is "usually true" that it was about being smart and then the third time you said it was "sometimes true." Can you think of why you answered like that?

Ingrid: It took me some time to think about it but I thought you don't really have to be smart to be able to read but sometimes people have problems and they can't read so it's in the sometimes category.

Ingrid's conscious use of strategies to improve her reading is indicative of a strongly internal view of her reading performance.

Researcher: The last one that interests me is question three: *when I understand what I read it is usually because I use strategies* and the first two times you said that that was "sometimes true" and then the last time you said that that is "usually true" so how has that changed for you?

Ingrid: Umm, I've started trying to read harder books and work and I just keep using strategies to understand words that I don't know.

Ingrid was not a student that exhibited strong external attributions to begin with so there was little observed change in the way she attributed her reading performance. She was not asked about any changes in her responses to the RAS questions that probed external attributions.

Ingrid obtained better scores in her e-asTTle reading comprehension tests over the intervention period. Her increased utilisation of reading strategies however, was not reflected in her attributions of reading performance over the intervention period.

Kate's changes in self-perceptions and attributions

Kate maintained a modest yet positive self-perception of her reading ability at the conclusion of both the reciprocal teaching and the attributional-retraining interventions. At the conclusion of the attributional-retraining stage of the intervention, she had developed more confidence in her expectation of success. At the second data-collection point however, Kate had identified what it was that would help her to improve her reading: "maybe if the teacher reads it, not like for us, but helps us with certain bits - in science" but by the third data-collection point, she was uncertain about what it was that would help her to improve.

When asked about her response to reading difficulty, Kate exhibited a strong effort attribution at all three data-collection points in that she would not give up reading a text if some of the words were hard to read. However, when asked about a situation in which she found a lot of the words hard to read, Kate exhibited a strong effort attribution at Time one but changed that to an ability attribution at Times two and three when she responded that she would give up. She was not however, able to justify her change in response or attribute it to either of the stages of the intervention. In her responses to RAS Question 1, *when I understand what I read, it is usually because I work hard*, Kate demonstrated a weaker effort attribution and struggled to clearly articulate the role of hard work:

Researcher: About question one, *when I understand what I read, it is usually because I work hard*, now all three times you did the survey you answered that that was "sometimes true," so can you explain that to me a little bit?

Kate: I think it's because, I don't know, sometimes I do work hard when I read but usually I just like ... I don't know how to answer that. Maybe because I don't find reading that difficult it doesn't feel like work?

Kate was not a student that exhibited strong external attributions to begin with and there was little observed change in the way she attributed her reading performance. This was corroborated by her responses to RAS Question 6, *when I don't understand what I read, it is usually because I'm not lucky*, to which she consistently responded *never true* thus exhibiting consistently weak external attributions:

Kate: Umm, I don't think it's about luck because you don't really need to be lucky to understand. You sort of need to understand it because you, I don't know, I don't think you need to be lucky to understand what you're reading cos yeah ... I don't know.

Towards the end of the intervention, Kate experienced a massive negative shift in attitude. The shift in Kate's attitude was determined by influences outside of the classroom and while she continued to comply in terms of expected behavior in class, she may have used the independent completion of reading tests or surveys to exercise some of this attitude which could explain why the attributional behaviours she exhibited in class were not reflected in her e-asTTle score.

Yvette's changes in self-perceptions and attributions

Yvette maintained a modest yet positive self-perception of her reading ability at the conclusion of both the reciprocal teaching and the attributional-retraining interventions. At the conclusion of the attributional-retraining stage of the intervention, she had developed more confidence in her expectation of success. Yvette remained certain about what would help her to improve her reading, again citing an improvement in her vocabulary knowledge:

Researcher: What do you think will help you to get better?

Yvette (Time three): like reading probably harder texts and stuff so that I can get more vocabulary so that I can read more and more and I'll know what more words mean.

When asked about her response to reading difficulty, Yvette exhibited strong effort attributions, responding negatively to both questions at each of the three data-collection points. However, in response to the RAS questions, she demonstrated a more inconsistent effort attribution and as a high-comprehender and high ability student in other areas, it seemed as if the change from focusing on ability as a reason for success or failure was difficult for her:

Researcher: If we look at question two it says *when I understand what I read it is usually because I am smart* so to start with, for the first two times you answered “usually true” and then for the last time you answered “sometimes true” so you’ve made this decision that it’s not necessarily about being smart. Can you think about why you answered it like that?

Yvette: It’s just kind of, I know I am smarter than others so there will be more words that I will know but ... I’m not quite sure actually.

Researcher: So, do you think you have to be smart to be a good reader?

Yvette: Not really because people are smart in like different areas so you can be smart and know like heaps of vocabulary and be a good reader but then you can be smart at maths and not know much about reading. So, it’s kind of true but yeah....

Yvette did not exhibit strong external attributions to begin with and there was little observed change in the way she externally attributed her reading performance. She responded to RAS Question 6, *when I don’t understand what I read, it is usually because I’m not lucky*, by rejecting the role of luck in reading performance which further demonstrated weak external attributional views.

Yvette: Yeah, it’s a bit weird to say I got this because I am lucky. It’s kind of – I don’t know – it’s like if you know what it means you just do and if you don’t then you don’t. It’s not about if your luck or anything.

Yvette adopted a more strategic approach to reading comprehension and she obtained higher scores in her e-asTTle reading comprehension tests throughout the intervention. The changes in her reading strategy use however, are not reflected in her attributions of reading performance over the intervention period.

5.5 Overall Findings from the Qualitative Data

The data from student interviews and observations do not align in any meaningful way in relation to any of the reading or motivational theories which underpin this study.

5.5.1 Reading strategy instruction

Consistent with the literature suggesting that strategy instruction enhances the learning experiences of students with learning-disabilities or significant reading deficiencies (for example, Borkowski et al., 1988; Cantrell et al., 2010; Edmonds et al., 2009; Lauterbach & Bender, 1995), both low-comprehenders were observed to be more actively involved in the reading process and reported applying some of the four strategies in reciprocal teaching so that they were reading more strategically.

The use of heterogeneous groups, as trialed by Palincsar and Brown (1984) in their Experiment 1, proved successful in the development of learning communities within the classroom where students feel safe enough to seek reading help from their peers.

5.5.2 Changes in internal attributions

Attribution theory (Dweck, 1999, 2008; Licht, 1983) indicates that conscious strategy use reflects a strong internal attribution. The treatment group was observed to be highly engaged with reciprocal teaching and some students reported applying some of the four strategies included in reciprocal teaching in other curriculum areas. There is no pattern in the interview participants' responses however that indicates that increased strategy use leads to an increase in internal attributions.

The qualitative data presented here provide counter-evidence to Dweck's (1999, 2008; Dweck & Bempechat, 1983) theory that effort and ability are dichotomous internal attributions. The high-comprehenders were unable to discriminate between the roles of effort and ability in improving reading comprehension, and even after their participation in the attributional-retraining intervention, which emphasised the role of effort in improving reading over the role

of ability, the two highest comprehenders explicitly acknowledged the role of both effort and ability in successful reading comprehension.

5.5.3 Changes in external attributions

The most significant shift in attributional views was in the observed external attribution behaviours of the low-comprehenders. Both low-comprehenders were observed using the strategies included in reciprocal teaching, in particular requiring fewer dialogue prompts from their groups, indicating a better understanding of the process of comprehending text. Contrary to Alderman's (2008) overview of attribution theory, these two students' internal attributions did not increase as their external attributions decreased.

5.5.4 Relationship between attributions and reading achievement

There was no correlation between students' achievement in reading comprehension and their attributions for reading performance. The qualitative data did not support either of the two dominant views in the literature; that is, firstly, that attributions have a causal relationship with achievement (Aronson et al., 2002; Blackwell et al., 2007; Good et al., 2003; Henderson & Dweck, 1990); secondly, that students' prior academic performance is the cause of students' attributional views (Gonida et al., 2006). Yvette proved to be the only student who fitted Gonida et al.'s view in that she held a modest but strong perceived academic competence and also had low external attributions and high internal attributions for her reading performance.

Chapter 6: Discussion and Conclusions

6.1 Overall Treatment Effects

The primary goal of the present study was to examine any effects of two stages of intervention on adolescents' reading achievement and attributional beliefs over time. More specifically, the aim was to investigate the extent to which progress in reading comprehension is served by learning the four reading comprehension strategies (predicting, clarifying, questioning and summarising) of reciprocal teaching and by the later addition of attributional-retraining.

Together, the quantitative and qualitative data provided some evidence that the use of reciprocal teaching led to positive, short-term improvements in the treatment group's reading comprehension, whereas the comparison group regressed in their reading comprehension. The treatment group's improvement in e-asTTle reading comprehension scores was seen at the conclusion of the reciprocal teaching stage of the intervention (Time two). However, these positive effects were not maintained over time.

Neither the quantitative or qualitative data supports the hypothesis that the addition of attributional-retraining to the reciprocal teaching intervention would have a significant positive effect on the treatment group's reading comprehension achievement. Nor did the evidence support the hypothesis that the treatment group would attribute their reading performance more to internal factors, than external factors as a result of attributional-retraining.

The findings are not consonant with existing research into attribution theory; in particular, neither the dichotomisation of stability and controllability attributions, Weiner's conceptualisation of attribution as comprising three aspects (known as dimensions), each of which forming its own continuum, nor the causal relationship between attributional beliefs and achievement were supported by the present research.

6.2 Evidence of Reciprocal Teaching Intervention Effects

The effect of reciprocal teaching was confined to the reciprocal-teaching-only stage of the intervention. It was characterised by greater progress for the treatment group than for the comparison group (which actually regressed at this stage).

The quantitative findings of the present study, in relation to reciprocal teaching, are another example of the lack of consistency in the findings of reciprocal teaching studies situated in high schools. Two examples of such studies are those of Westera and Moore (1995) and Alfassi (1998), which each have methodological similarities to the present study. In one of the only other studies of reciprocal teaching in New Zealand high schools, Westera and Moore also implemented an intervention with year nine students. However, they did not administer reciprocal teaching with intact classes, rather they separated struggling readers from the class into three experimental conditions including two reciprocal teaching conditions of different durations (between six and eight contact hours, and between 12 and 16 contact hours). The extended duration condition, which was of similar length to the reciprocal teaching intervention in the present study, yielded significant reading comprehension gains with a much larger effect size ($g = .67$) than the present study, as measured by an earlier version of the standardised PAT Reading Comprehension. These gains were also maintained over a period of up to seven months, whereas no long-term effects were seen in the present study. Alfassi's American study administered reciprocal teaching with intact classes. In this study the reciprocal teaching condition reported a large effect size ($g = .81$) when using researcher-developed measures but when measured using a standardised measure (the Gates-MacGinitie Reading Tests), students regressed in their reading comprehension performance, yielding a negative effect size ($g = -.26$).

6.2.1 Reported effect sizes and outcome measures

The effect size of the short-term effect of the reciprocal teaching intervention in the present study is considerably smaller ($d = .39$) than that reported in Hattie's (2009) synthesis of meta-analyses and those of a number of other intervention

studies (Kelly et al., 1994; Klinger & Vaughn, 1996; C. D. Miller, Miller, & Rosen, 1988; Palincsar & Brown, 1984; Sporer et al., 2009). Larger effect sizes tend to be obtained when researcher-developed measures of reading comprehension, such as questions based on the text used in the reciprocal teaching intervention, are utilised rather than standardised measures of reading comprehension. This finding is unsurprising; researcher-developed measures probe the specific strategies used to comprehend a specific piece of text, whereas standardised measures of reading comprehension requires students to have a range of strategies that they can transfer to a range of texts that are unfamiliar to them.

The disparity between results of studies using standardised tests and those using researcher-developed tests is consistent with literature in the wider field about reading interventions with adolescents (for example, Edmonds et al., 2009; Sporer et al., 2009; Swanson, 1999). Edmonds and colleagues, like Spörer and colleagues, suggest that this is an issue of a lack of learning transfer; that is, that the skills tested by the researcher-developed measures were specific to that text only and thus did not generalise to the standardised tests. A lack of learning transfer could provide a reason for the limited effect size seen in the present study.

In the case of the present study, students used expository texts with explicit text features such as topic sentences, infographics and paragraphing, for reciprocal teaching yet the PAT and e-asTTle tests contained a variety of expository and narrative texts; in particular, the narrative texts did not contain the explicit text features seen in the expository texts used in the intervention.

In addition to issues of learning transfer, there are also methodological considerations for researcher-developed measures of comprehension. For the researcher to not only design the intervention but also the outcome measure (and in some cases facilitate the intervention), there can be an element of researcher bias, whereby explicit teaching (or preparation of the materials to be taught) to the test could occur which might in turn, speciously improve measured comprehension. Many studies do detail measures taken to maintain integrity in the study, such as using researchers or assistants who are not connected to the study and who do not know the hypothesis, to facilitate the intervention and having disconnected researchers check the validity of researcher-developed measures. Even so, the

correspondence between the information and test materials might nonetheless be responsible for some bias on their behalf. Examples of reciprocal teaching studies that have used researcher-developed tests include: Kelly's (1990; Kelly et al., 1994) study of reciprocal teaching with small groups of poor readers in a New Zealand primary school has an effect size of greater than one ($d = 1.36$) for the researcher-developed comprehension tests. Half of the comprehension measures used in Kelly's study were devised by the researcher who was also the classroom teacher; all of the comprehension measures were based on texts used in the reciprocal teaching intervention. Miller, Miller and Rosen's (1988) small study of modified reciprocal teaching with pre-adolescents using researcher-developed comprehension tests is reported by Galloway (2003) as having an effect size of greater than one ($g = 1.15$). In this study the comprehension measures were developed by the researchers and administered by the classroom teacher and were based on the intervention materials. Spörer, Brunstein and Kieschke's (2009) study of reciprocal teaching, compared with two other reading strategy interventions with German elementary school children, also reported having an effect size of greater than one ($d = 1.44$) on a researcher-developed measure of reading comprehension. The study utilised both standardised and researcher-developed measures of reading comprehension; however, the standardised measure was used to establish whether reading comprehension skills were transferred to different text types and subjects. The researcher-developed reading comprehension measures constituted nine comprehension questions based on the texts used in the intervention which the authors acknowledged to be easier than the standardised test because of the considerate nature (Armbruster, 1984) of the texts used; that is, they were clearly structured with explicit text features to sign-post ideas.

One of the most note-worthy features of all three of these examples is that students' comprehension is measured using the text that they have just spent a session strategically reading with their teacher and peers. Thus, as Edmonds et al. (2009), Spörer et al. (2009) and Galloway (2003) pointed out, comprehension was only measured in the specific context of that piece of text, not in a wider context hence the lack of demonstration of learning transfer. Also, it could not be ruled out that these tests or the reported effects were as much about students' memories of

the reciprocal teaching session and the understandings developed amongst the group, as of the comprehension developed from the application of the strategy to the text.

Standardised tests such as PAT Reading Comprehension have been rigorously trialled and normed with test items typically calibrated to measurement scales, whereas it seems unlikely that researcher-developed measures such as those discussed, have been tested with the same rigour to ensure that they measure what they purport to measure. In the case of the ten studies included in Rosenshine and Meister (1994) and Galloway's (2003) meta-analyses, these studies utilise both standardised and researcher-developed measures, and report on the larger of the two – usually the researcher-developed measure. Claims of significant reading comprehension effects made by studies based on researcher-developed tests with unknown reliability such therefore ought to be considered with caution because the effects may be limited to specific strategies applied to specific texts, and not generalisable to other texts types or reading contexts.

Hattie (2009) ranks reciprocal teaching as the ninth of 138 most influential educational interventions to improve learning outcomes based on Rosenshine and Meister (1994) and Galloway's (2003) meta-analyses, noting that "the effect size from both meta-analyses is a very high $d = .74$ " (p. 204). While Rosenshine and Meister's finding about the discrepancy in effect size was acknowledged in Hattie's work, it does not appear to be accounted for in the calculation, or interpretation, of the overall effect size for reciprocal teaching. Hattie's high ranking is consonant with the positive feeling espoused in the wider literature about reciprocal teaching as an instructional activity. Reading comprehension gains, albeit effects based on specific texts that may therefore not be generalisable, are achieved over short timeframes, with students of all ages, in a range of instructional group sizes (Renshine & Meister, 1994), regardless of whether it is a classroom teacher or a researcher implementing the strategy (Galloway, 2003).

It is worth noting also that Hattie (2009) calculated the average effect size for influences in education as $d = 0.40$ and set that as the bench-mark for the judgement

of effects in education. The present study obtained an effect size of $d = .39$, and while appearing considerably smaller than the effects obtained using researcher-developed measures, it is negligably lower than Hattie's criteria for an innovation in education that influenced achievement. This suggests that even without the inflated results based on researcher-developed measures, reciprocal teaching can be effective in improving student achievement, and more careful research is required; in particular of the timeframe of intervention required to obtain systematic positive shifts on standardised measures of reading comprehension.

While the discrepancy between effect sizes obtained on different outcomes measures is acknowledged in some of the literature (for example, Galloway; Rosenshine & Meister; Sporer et al., 2009), the lack of attention paid, in other studies, to the discrepancy in effect sizes between standardised tests and researcher-developed measures may have problematic implications for policy and pedagogy. The New Zealand Curriculum document (Ministry of Education, 2007) includes teaching-as-inquiry as one of seven teacher actions that comprise effective pedagogy. The teaching-as-inquiry process is focussed on first identifying the specific needs of a group of students and then identifying teaching strategies that could be implemented to meet such needs; followed by an analysis of how well the chosen strategy met the students' needs. In identifying their own pedagogical needs, teachers are encouraged to consider evidence from research. If, as in the case of reciprocal teaching, specious results based on measures with unknown reliability are reported in the research, teachers may be more likely to implement these strategies based on such results. However, without an understanding of the potential limitations of these studies, teachers may be disappointed that they are unable to obtain similar results. Furthermore, teachers in New Zealand secondary schools are encouraged to use standardised measures of reading comprehension (PAT and e-asTTle) which the present study, as well as a significant body of research, indicate require a longer period of time for students to develop the generalised reading skills required to be successful on such measures.

The frustration of not being able to replicate similar results to those obtained using researcher-developed measures has even greater implications as a result of

the imminent possibility of New Zealand adopting a system of performance-based pay for teachers. While the Maxim Institute of New Zealand (Maxim Institute, 2012) suggests that there needs to be a range of performance pay models and to allow schools autonomy to select the model most appropriate to them, international examples suggest that one of the three most common models is financial compensation for the individual teacher based on students' test score gains on standardised tests or external examinations (Schleicher, 2011; Sclafani, 2009). If policy makers do not read research carefully; in particular do not understand that researcher-developed measures can produce spuriously inflated results compared to those produced by standardised measures, and use such research to develop performance-based pay models, then teachers could also be financially disadvantaged by not being able to meet what is actually an unrealistic target.

6.2.2 Merging the quantitative and qualitative findings

The qualitative findings of the present study, reflect the affirmatory tone in much of the wider literature to do with reciprocal teaching and the effects that can be obtained (for example, Alton-Lee et al., 2012; Duke & Pearson, 2002; Galloway, 2003; Palincsar, 2003; Palincsar & Brown, 1984; Rosenshine & Meister, 1994). Students were observed to be participating enthusiastically within their groups and using the supportive nature of the groups as a safe environment to ask questions and solve vocabulary and comprehension issues without exposing themselves to potential embarrassment by asking in front of the whole class. In the qualitative interviews, students also provided affirming answers about the efficacy of reciprocal teaching. These findings indicate that students not only enjoyed the intervention but found it beneficial.

The learning community created by the reciprocal teaching structure was effective and was reflected in the e-asTTle scores of the treatment group, albeit in a weak and transitory way. Observations suggest that when the focus of the intervention changed from reciprocal teaching to attributional-retraining, students

became more complacent in their participation in reciprocal teaching which may account for the lack of systematic effect seen in the qualitative data.

One possible reason for the apparent inconsistency between the positive feeling in the qualitative findings and the limited effect seen in the quantitative findings is the positioning of myself as both classroom teacher and researcher. Because of the traditional, hierarchical structure of most New Zealand secondary schools, teachers are positioned as authority figures, whose instructions are to be complied with; while I encourage independent thinking and am open to learning from my students in addition to teaching them, my classes mostly conform to this traditional hierarchical model. Thus, students may have participated in the reciprocal teaching intervention out of compliance, and on some occasions, provided answers to interview questions that they believed I wished to hear.

In their examination of the skills and processes involved in becoming a strategic reader, Paris, Lipson and Wixson (1983) caution that a reading strategy can be performed for reasons of compliance, and that application of a strategy for this reason, is superficial. In such a situation, students are not employing the implicit, procedural memory that is characteristic of good readers, nor are they practising it in a way that is likely to lead to the automatising of the strategy. Thus, if students participated in reciprocal teaching in the present study out of compliance, rather than genuine interest or the belief that these strategies could help them to improve their reading, then it is not unreasonable to suggest that limited, or no, positive effects would be seen as students did not properly take the strategy on in the first place.

Much of the research literature on reciprocal teaching emphasises that an intervention of reasonably short duration can lead to significant improvements in students' reading comprehension achievement, many of these effects were based on spurious results from researcher-developed measures. There is a paucity of longitudinal research on reciprocal teaching, leaving it unclear as to whether the adoption of the reading strategies included in reciprocal teaching are ever successfully transferred, or result in long-term improvements in reading comprehension. In order to establish whether the strategies that comprise reciprocal

teaching can lead to long-term improvements in reading comprehension longitudinal research that utilises standardised measures must be conducted. Because of the logistical constraints of class groupings and timetables in secondary schools, such studies would need to be conducted over the course of a full school year. Such a time frame would also allow for more careful tracking of the time course of any measured effects.

Whatever the reason for the apparent inconsistency between the quantitative and qualitative findings, there remains sufficient evidence in the treatment effect attributed to the reciprocal teaching intervention and the observed enthusiastic participation of participants, to suggest that implementing reciprocal teaching into junior secondary English classes is positive and, with time, could show systematic positive effects on reading comprehension achievement. However, before reciprocal teaching is widely implemented, more careful research is needed to establish whether reciprocal teaching is as effective of a strategy as it is purported to be and over what timeframes can transferable reading comprehension effects reasonably be measured.

6.3 Evidence of Attributional-Retraining Effects

The design of the present study, specifically the addition of attributional-retraining to reciprocal teaching, was such that it yielded no evidence in respect of the extent to which attributional-retraining can be effective on its own. Qualitative data that suggests an effect of attributional-retraining, such as low-comprehenders being less-reliant on external help and exhibiting behaviors such as needing fewer dialogue prompts during reciprocal teaching, are possibly a result of the supportive learning communities created through the use of reciprocal teaching, whereby students feel more able to ask their peers for help, rather than as a result of attributional-retraining.

6.3.1 Evidence of combined intervention effects

There is no evidence from the present study to support the hypothesis that the addition of attributional-retraining that encouraged effort with reading strategies, to the reciprocal teaching intervention would improve the reading comprehension achievement of the treatment group, beyond the gain achieved in the reciprocal teaching-only stage of the intervention. As discussed previously, an improvement in the treatment group's e-asTTle reading comprehension scores was only seen at the conclusion of the reciprocal teaching intervention, and not the second stage of the intervention where attributional-retraining was added to the reciprocal teaching intervention. The findings of the present study are therefore consistent with Miranda and colleagues' (1997) claim that a robust reading strategy renders attributional-retraining unnecessary.

The findings from the present study do not support a number of superficial claims that the combination of reading strategy instruction and attributional-retraining is expected to improve reading comprehension (for example, Berkeley et al., 2011; Carr & Borkowski, 1989; Chan, 1996; Peterson, 1992; Short & Ryan, 1984). One possible reason for the discrepancy between the findings of the present study and the claims made about the combination of interventions is the difference in attributional-retraining interventions and the message that was emphasised. In the present study, generalised effort was emphasised as the better mindset whereas in Chan and Peterson's studies, their attributional-retraining emphasised specific strategy use, reciprocal teaching and the reading start programme respectively. While both effort and strategy attributions share the same dimensionality, that is, internal, unstable and controllable, it is evident that directing students' effort into using one strategy is much more explicit than asking them to apply more (un-directed) effort. In the present study, students – including struggling readers with limited inferential ability – were expected to infer that increasing effort meant increasing the effort that they put into reciprocal teaching.

It is important to note that some of the combined intervention studies that made claims of combined reading strategy and attributional-retraining effects on reading comprehension, such as Berkeley, Mastropieri and Scruggs (2011), Chan

(1996) and Peterson (1992), employed multiple group designs whereby at least one group participated in a reading strategy-only condition with significant effects being obtained from these strategy-only conditions. While the methodology of these studies requires further examination; in particular to determine whether the attributional-retraining allowed participants more time to engage with the reading strategy or whether, like in Berekeley and colleagues' study, the combined group was the only treatment condition to be taught by the researchers, these findings add to Miranda and colleagues' (1997) finding that in the case of learning-disabled students and reading strategy use, attributional-retraining is unnecessary.

6.4 The Dimensionality of Junior Students' Attributions of Reading

An important finding in the analysis of the wider baseline sample's attribution data was that, contrary to Weiner's (1979) version of attribution theory applied to classroom contexts, internal and external attributions did not form two ends of the locus of causality continuum; instead, they reflected two separate (although negatively correlated) constructs. The junior secondary school students (years 9 and 10) in this sample were diverse in the attributions that they made for reading comprehension performance. Students' responses were widely distributed along both internal and external attribution scales, and students who made strong internal attributions did not necessarily make weak external attributions, and vice versa, as Berkeley, Mastropieri and Scruggs (2011), the authors of the RAS instrument, suggested they would. The six students who participated in qualitative interviews were representative of the diversity in the baseline sample. Although chosen for their diversity in reading achievement, no student conformed to the expected pattern of having high internal attributions and low external attributions for reading performance, or vice versa.

6.4.1 Stability and controllability

Closer examination of the data from the first two internal attribution questions of the RAS; Question 1 which probes the incremental mindset and Question 2 which probes the entity mindset, indicate that, contrary to Dweck's (1999, 2008; Dweck & Bempechat, 1983) theory of intelligence, students were not dichotomous in their responses. The first two questions probed students' theories/mindsets applied to the domain of reading and the majority of students endorsed the positive response categories for both questions, indicating that many did not hold absolute entity mindsets or absolute incremental mindsets about their reading performance. The absence of a clear dichotomy is consistent with Bonne's (2012) findings whereby neither the students, or the teachers, in her study held absolute entity or incremental views.

In the present study, students' interview responses confirmed the absence of a dichotomy, as well as suggesting that attribution has more than one dimension, in that a number of students made *both* stable and uncontrollable (entity) and unstable and controllable (incremental) attributions for their reading performance. In particular, the higher-achieving readers were the students who did not distinguish between the distinct roles of effort (incremental) and ability (entity) in reading. As capable students who had worked hard and achieved well during their schooling to date, and had had their intelligence acknowledged by way of school reports and teachers' praise, they were able to distinguish between effort and ability but acknowledged the role of both.

Studies that reported a clear dichotomy in participants' attributional beliefs, such as those of: Blackwell, Trzesniewski and Dweck (2007); Dupeyrat and Mariné (2005); Pepi, Alesi and Geraci (2004); Dweck, Chiu and Hong (1995); assumed a dichotomy by labelling participants as exclusively holding incremental or entity mindsets depending on their averaged score on Dweck's (1999) *Implicit Theories of Intelligence Scale*. As suggested by Bonne (2012), by dichotomising participants' beliefs in this manner, all of the subtleties and richness in their beliefs about intelligence, or in the case of the present study reading, are lost.

6.4.2 Instrument choice

The RAS was chosen on the basis that it probed all three aspects of attribution theory and was domain specific to reading whereas Dweck's (1999) commonly utilised Implicit Theories of Intelligence Scale is domain general and probes a complex and problematic idea; intelligence, in addition to only focussing on the stability and controllability dimensions of internal attributions which determine the dichotomous theories of intelligence; entity and incremental theories.

It is interesting to note that, despite developing an instrument designed to probe all three of Weiner's (1979) aspects of attribution; causality, stability and controllability, Principal Components Analysis revealed only two dimensions and, as already discussed, these dimensions related to each of what was theorised to be the two ends of one continuum; causality. In their study using the complete version of the RAS, Berkeley, Mastropieri and Scruggs (2011) did not discuss the dimensionality of their findings, instead using a binary split to dichotomise students as having either high internal attributions and low external attributions, or high external attributions and low internal attributions. This approach ignores both the complexities of Weiner's theory and the subtleties of students' beliefs. It also prevents Berkeley and colleagues from understanding the specific aspects (stability/controllability) of attribution that make up students' overall internal or external attributions.

Perhaps the greatest limitation of the RAS, was that the domain-specific focus of the survey was not specific *enough* in that it required students to think about their reading in an abstract way; for example, it asks *"when I don't understand what I read, it is usually because the material is too difficult"*, requiring students to think of situations in general in which they could not understand what they were reading, and to establish whether the difficulty of the text was the reason that they could not comprehend in those situations. The complexity of the abstract thought required to answer this question might have been beyond the capabilities of many students.

In the case of future research, a task-specific measure of students' attributions or self-efficacy beliefs of reading may offer greater explanatory power. While self-efficacy is separate construct to attribution, the two are related in that they are both self-beliefs that influence motivation. A task-specific self-efficacy

measure asks students “to report the level, generality, and strength of their confidence to accomplish a task or succeed in a certain situation” (Pajares, 1996, p. 546), in this context a reading task; an example of such a measure is Shell, Colvin and Bruning’s (1995) *Reading Self-efficacy Instrument* which asks students to rate their confidence to complete 18 different reading tasks such as “read a play by Shakespeare” from 1 *I’m sure I can* to 5 *I’m sure I can’t*. The use of such a specific measure would provide greater explanation of students’ overall beliefs about reading in that the specific aspects of reading, such as: types of texts, text features, reading task, that have contributed to their overall reading self-efficacy could be analysed.

6.5 Relationships between Reading and Attribution Variables

In the literature the incremental mindset (internal, unstable, controllable attribution), as opposed to the entity mindset, is posited as the most beneficial for students because of its positive effect, in some studies, on achievement (for example, Aronson et al., 2002; Blackwell et al., 2007; Good et al., 2003).

The findings of the present study indicate a limited relationship between reading comprehension achievement and attributional views; in particular, there was no evidence to support the theorised relationship between an incremental mindset and reading achievement. The only question of the RAS to have a significant correlation with both measures of reading comprehension achievement was, “*when I understand what I read, it is usually because I am smart*”, which probes the entity mindset (internal, stable, uncontrollable attribution); the direction of this correlation was the opposite of that predicted by the theory. Comparatively, “*when I understand what I read, it is usually because I work hard*”, designed to probe the incremental mindset, was not significantly correlated with reading comprehension achievement. Interesting examples of this finding are two high-achieving girls, who in the pre-test were the highest achieving students for reading comprehension in the treatment group. As well as being high-comprehenders and diligent students, according to their responses to the RAS, both girls had extremely low external attributions and held

stronger entity beliefs than incremental beliefs in terms of their internal attributions (one student had relatively low internal attributions overall whereas the other's were relatively high).

The cases of these two students suggest that the causal direction of the relationship between attributional beliefs and achievement, in particular reading comprehension achievement, is in fact the opposite of what is theorised; that these girls' high reading-achievement has led them to believe that they are good readers and, as posited by Gonida et al. (2006), hold stronger entity mindsets as a result. If this is indeed the case, then this finding further challenges the need for attributional-retraining in the classroom. It is also possible that variables other than attributional views have influenced the girls' reading achievement, such as the fact that both of these students come from homes in which reading is encouraged and modelled by the adults in their lives, or that they both have modest, but high perceptions of their reading competence.

6.6 Implications for Future Research

The findings of the present study suggest that further research into the use of reciprocal teaching in secondary school classes is necessary. In future research in the context of intact classes in New Zealand secondary schools, it is important to make a clear distinction between the researcher and the classroom teacher to avoid issues of compliance answers. This would involve working with classes taught by other teachers and assuming the role of an external researcher. When working with other teachers, ideally the same teacher would be able to teach all experimental groups in order to limit the effects of confounding variables however, due to timetabling restraints in secondary schools this may not always be possible. Thus in situations in which multiple teachers are used to implement interventions they will need to be monitored more closely to ensure that they are teaching the same programme and implementing the intervention as intended.

The present study did not have the scope to examine the influence of teachers' beliefs on students reading and attributions for reading performance;

however, given the significant difference between the reading achievement of the treatment and comparison groups, and the confounding variable of the comparison group having a different teacher, analysis of the effect of different teachers' beliefs may have offered further explanation of this difference in achievement.

6.7 Conclusions

There is promise in the use of reciprocal teaching in secondary school English classrooms, in particular to meet the needs of struggling adolescent readers. The qualitative data indicates that reciprocal teaching was received positively by many students; most of the interview participants reported it as a useful strategy and some struggling readers were observed making gains with understanding problematic vocabulary and in their overall comprehension of texts. The quantitative data supported a short-term positive effect but also injected a note of caution into existing research, in particular in respect of the claims made on the basis on researcher-developed measures of reading comprehension.

There is no evidence from the present study in support of the inclusion of attribution theory in reading strategy instruction by way of attributional-retraining. The qualitative data show that students comfortably use the rhetoric of attribution theory, in particular of the incremental mindset and can be prevailed upon to report different attributions. The quantitative data from the present study do not support combining reading strategy instruction and attributional-retraining. These data also inject a note of caution into the claims made in existing research, in particular about any *causal* relationship between students' attributional beliefs and (reading) achievement for which little convincing evidence has ever been published.

The motivation for this study was to assist struggling-readers who let their own beliefs about themselves as readers affect their motivation to apply reading strategies. Attributional-retraining seemed like an appropriate strategy to target these students and their beliefs, as well as being a strategy that would be easily implemented in a classroom environment. However, the findings of the present

study indicate that attributional-retraining is unlikely to be effective; it had little effect on reading comprehension achievement in the treatment group. Despite Miranda and colleagues (1997) assertion that powerful reading strategies, such as those included in reciprocal teaching, render attributional-retraining superfluous, my experience continues to suggest otherwise. Students' attitudes and motivations do seem to pose a significant obstacle to their reading achievement and warrant further research. Attribution theory was demonstrated by the present study as not adding having an effect on reading comprehension achievement in combination with reciprocal teaching; however, this does not discount further research into other areas of motivation research; for example, self-efficacy beliefs, need theory, self-determination, incentive theory, goal setting etc., and their relationship with reading strategy use.

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Appendices

Appendix A: Interview protocol

Interview questions

Interview #1 – pre-intervention

Researcher will have at this point baseline data: PAT and e-asTTle reading comprehension tests and results from initial Reading Attribution Survey.

1. How do you see yourself as a reader?
Does it depend on anything (for example what you're reading or what class you're in at school.)
2. When you think back to primary or intermediate school, when do you think you were best at reading?
Do you know why that is?
3. Do you read outside of school?
If so, what kind of things do you read?
If so, where do you do most of your reading? At home?
4. What sort of reading material do you have at home?
5. Do you see your family/people in your household reading?
6. In school, what subjects/classes do you like to read in?
7. Tell me about reading in science? And in social studies?
8. Do you usually understand what you read?
9. What sort of things do you do while you are reading?
10. When some of the words are hard to read do you keep reading or do you give up?
What about when quite a lot of the words are hard to read?
11. How do you feel when you get stuck when you're reading?
12. Who helps you with reading?
Who do you think can help you to improve your reading?

13. Do you think if you can get better at reading while you are at secondary school?

What do you think will help you to get better?

Covers:

student's perception of themselves as a reader

student's background as a reader, reading habits and influences

student's reading strategies

Researcher will have at this point baseline data and time two e-asTTle reading comprehension tests and results Reading Attribution Surveys.

1. How do you see yourself as a reader?
Does it depend on anything (for example what you're reading or what class you're in at school.)
2. Do you usually understand what you read?
3. What sort of things do you do while you are reading to help you to understand?
4. Thinking about when we do predicting/clarifying/summarising/questioning (choose one) in reciprocal teaching:
Do you find it easy/hard?
What did you do when you predicted/clarified/summarised/questioned (choose one) ?
Can you think of another time when you were reading and you used predicting/clarifying/summarising/questioning (choose one) to help you?
5. When some of the words are hard to read do you keep reading or do you give up?
What about when quite a lot of the words are hard to read?
6. How do you feel when you get stuck when you're reading?
7. Who helps you with reading?
Who do you think can help you to improve your reading?
8. Do you think if you can get better at reading while you are at secondary school?
What do you think will help you to get better?
9. What things help you to keep going with reciprocal teaching?
10. *Ask students if they can explain any changes in their attribution from time one to time two.*
(Looking at the Reading Attribution Survey)

Covers:

student's perception of themselves as a reader

student's reading strategies, transfer of reciprocal teaching strategies

student's expectations for success and attributions for reading

Researcher will have at this point baseline data and time two and three e-asTTle reading comprehension tests and results Reading Attribution Surveys.

1. How do you see yourself as a reader?
Does it depend on anything (for example what you're reading or what class you're in at school.)
2. Do you usually understand what you read?
3. What sort of things do you do while you are reading to help you to understand?
4. Thinking about when we do predicting/clarifying/summarising/questioning (choose one) in reciprocal teaching:
Do you find it easy/hard?
What did you do when you predicted/clarified/summarised/questioned (choose one) ?
Can you think of another time when you were reading and you used predicting/clarifying/summarising/questioning (choose one) to help you?
5. When some of the words are hard to read do you keep reading or do you give up?
What about when quite a lot of the words are hard to read?
6. How do you feel when you get stuck when you're reading?
7. Who helps you with reading?
Who do you think can help you to improve your reading?
8. Do you think if you can get better at reading while you are at secondary school?
What do you think will help you to get better?
9. What things help you to keep going with reciprocal teaching?
10. *Ask students if they can explain any changes in their attribution from time two to time three.*
(Looking at the Reading Attribution Survey)

Covers:

student's perception of themselves as a reader

student's reading strategies, transfer of reciprocal teaching strategies

student's expectations for success and attributions for reading

Appendix B: Schedule of texts used in reciprocal teaching intervention

Intervention Stage One		
Date	Text	Type of use
27 th – 28 th August	<i>Tattoo</i> by Helen Frances	<i>Whole class practise of RT processes (1hr)</i>
31 st August	<i>Movie Extra</i> by Janice Marriot	Group Session (1hr)
6 th September	<i>Follow Spot – Stand-by</i> by Sue Gibbison	Group Session (1hr)
14 th September	<i>Ngati Babe</i> by Karen Phelps	Group Session (1hr)
17 th September	<i>Cold Water Survival</i> (from arb.nzcer.org.nz)	Group Session (1/2hr)
20 th September	<i>Tearaway Editor Loves Her Job</i> by Helen Frances	Group Session (1hr)
24 th September	<i>Images from an Artist's Journey</i>	Group Session (1hr)
Intervention Stage Two		
Date	Text	Type of use
29 th October	<i>Runners</i> (from arb.nzcer.org.nz)	Group Session (1hr)
31 st October	<i>Gold Through the Ages</i> (from arb.nzcer.org.nz)	Group Session (1hr)
2 nd November	<i>One Small Step</i> by David Hill	Group Session (1hr)
9 th November	<i>His Own War</i> by David Grant	Group Session (1hr)
12 th November	<i>Violet Wall</i> by Philippa Werry	Group Session (1hr)
14 th November	<i>Avalanche Dogs</i> by Pauline Cartwright	Group Session (1hr)

Appendix C: AR micro-intervention protocol

When students articulate statements from (or similar to) column A the researcher will reply with something from (or similar to) column B.

A Maladaptive attribution	B Attributional-retraining through verbal feedback
<ul style="list-style-type: none"> • I can't do it • I don't know what to do so I'm not going to try • I don't get it • I suck at reading • I can't read • I did well • I'm good at this • I don't need to do this, I can already do it • My group are better readers than me • Did I do well Miss? 	<ul style="list-style-type: none"> • Yes you can do, with a little bit more effort I'm sure you can. What aspect of reciprocal teaching do you need to work a little harder at? See! You can do it. • Of course you can. You might just need to work a bit harder to understand some aspects of it. What is it that you're not sure about? Let's work out where you need to put in a bit more effort. • No you don't. With hard work you can always improve. Have a go. • That's great. You obviously worked hard to do well. I'm sure with more work you could do even better. • I'm sure with an even greater effort you could do even better. Give it a go. • If that is true, they must work really hard at their reading. If you keep working hard your reading could be just as good. • If you put in your best effort then you should be proud of yourself.

Appendix D: Information Sheets



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INFORMATION SHEET FOR PRINCIPAL and /or BOARD of TRUSTEES

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

My name is Anita Titter and I am a Masters student at Victoria University. For my thesis I am conducting quasi-experimental research on whether changing students' views about their reading comprehension ability can be used to help students become more motivated and progress in their reading comprehension.

The research is supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

I have had seven years of teaching experience and curriculum development in the secondary area – four at this school, and more recently as literacy leader developing professional learning programmes for staff in the area of adolescent literacy.

The research will involve an initial meeting with all year nine and ten students to distribute information sheets and consent forms for them and their families. They will complete a short survey of seven items about the way they view their reading comprehension ability. I will then try to correlate these surveys with students' existing e-asTTle and PAT results from March 2012. This information will provide baseline data for the remainder of the study.

Following the gathering of baseline data, two classes will participate in a multi-level intervention. One class will be the treatment class whereby they participate in two stages of the intervention: the first, a group reading initiative (reciprocal teaching) aimed to improved reading comprehension; the second, repetition of the reciprocal teaching intervention with the addition of a programme (attributional retraining) designed to help students to improve their views of their reading comprehension ability and of themselves as learners in general. Attributional retraining will consist of a talk from the head students where they will discuss the benefits of putting in your best effort in all facets of life, followed by consistent verbal feedback of students' effort in reciprocal teaching from me, the classroom teacher.

At three time points during the intervention - the beginning and end, as well as in between the two stages - students will have their reading comprehension tested using newly developed, 20 minute e-asTTle tests. Students will complete additional Reading Attribution Surveys (RAS.) Six students within three bands of PAT achievement will also be interviewed over the three time points. These interviews will be audio recorded and transcribed. The transcriber will have signed a confidentiality agreement. A second year nine class will act as the comparison class by completing both the e-asTTle and the RAS

at the same three time points.

It is expected that this process will take approximately three months. 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. Students will have a right to check the data collected throughout the observation and interview process. I will give an oral explanation to the students about the findings from their interviews. 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 assistance to liaise between the Chairperson of the BOT, parents/caregivers and myself
- To provide a space at school where I can conduct my study
- Your permission to use the data obtained for conference papers and/or publication
- Your permission for the researcher to take samples of student e-asTTle achievement results (consent will also be sought from the parents/caregivers and the student)
- Your permission for the researcher to take class reciprocal teaching and attributional retraining programmes during the research time

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

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR PARENTS/CAREGIVERS OF YEAR NINE STUDENTS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hello, Kia Ora, Talofa lava,

My name is Anita Titter and I am an English teacher and Literacy Leader at XXX College as well as a Masters student at Victoria University. For my thesis I am conducting research on whether changing students' views about their reading comprehension ability can be used to help students become more motivated and progress in their reading comprehension. I am seeking your permission to use your child's e-asTTle and PAT reading comprehension test results from the beginning of the year and to have your child complete a survey about their views on reading comprehension.

The research is supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

The school and your child will not be named in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and the data collected will be reported in written form. The data 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, and these findings will be shared with parents/ caregivers or a Board of Trustees meeting. The data obtained from this research may be used for conference papers and or publication.

This proposal has the approval of the Victoria University Wellington Faculty of Education Ethics Committee.

What I would like from you:

- Your consent to allow xxx (participant) to participate in this study
- Your permission to use xxx (participant's) e-asTTle and PAT reading comprehension test results from the beginning of the year
- Your permission for xxx (participant) to complete the Reading Attribution Survey

If you have any questions concerning the information sheet, please feel free to contact the principal for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR PARENTS/CAREGIVERS OF YEAR NINE STUDENTS TREATMENT GROUP

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hello, Kia Ora, Talofa lava,

My name is Anita Titter and I am an English teacher and Literacy Leader at XXX College as well as a Masters student at Victoria University. For my thesis I am conducting research on whether changing students' views about their reading comprehension ability can be used to help students become more motivated and progress in their reading comprehension. I am seeking your permission to observe your child in the class programme, interview them, and to collect reading comprehension test data and reading attribution survey data from them.

The research is supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

This research will be conducted in your child's English class in conjunction with their existing English programme. I will be meeting with the principal, Mr. XXX, to discuss the programme and to obtain his permission for the research also. During the research the class will participate in two stages of the intervention: the first, a group reading initiative (reciprocal teaching) aimed to improved reading comprehension; the second, repetition of the reciprocal teaching intervention with the addition of a programme (attributional retraining) designed to help students to improve their views of their reading comprehension ability and of themselves as learners in general. Attributional retraining will consist of a talk from the head students where they will discuss the benefits of putting in your best effort in all facets of life, followed by consistent verbal feedback of students effort in reciprocal teaching from me, the classroom teacher. I will be observing students as they work in their reciprocal teaching groups and taking notes.

I will be interviewing some students about their experiences with these interventions at three points within the study. These interviews will take no more than thirty minutes and will be audio recorded and transcribed. At the beginning, middle and end of this research I will be taking additional 20 minute e-asTTLe reading comprehension tests to see the progression of students' reading comprehension. At the same time I will also get students to complete additional versions of the Reading Attribution Survey to see how their views of their reading comprehension ability have changed. It is important that your child's participation in interviews is voluntary and with their informed consent and that your consent as parent/caregiver is also given.

This will all happen within the normal English class as a part of the year nine English programme. It is expected that this process will take approximately three months. Your child will not be disadvantaged in any way, as he or she will not be missing out on any learning. I will explain to the whole class that interviews are designed to help me in my research and participation in them does not indicate anything about their behaviour or reading ability.

The school and your child will not be named in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and the data collected will be reported in written form. The data will be kept for a period of two years and then destroyed. A summary of the general findings will be made available on completion of the project, and these findings will be shared with parents/caregivers or a Board of Trustees meeting. The data obtained from this research may be used for conference papers and or publication.

This proposal has the approval of the Victoria University Wellington Faculty of Education Ethics Committee.

What I would like from you:

- Your consent to allow xxx (participant) to participate in this study
- Your permission to use xxx (participant's) e-asTTle and PAT reading comprehension test results from the beginning of the year
- Your permission for xxx (participant) to complete the Reading Attribution Survey
- Your permission for xxx (participant) to participate in an interview

If you have any questions concerning the information sheet, please feel free to contact the principal for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR PARENTS/CAREGIVERS OF YEAR NINE STUDENTS COMPARISON GROUP

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hello, Kia Ora, Talofa lava,

My name is Anita Titter and I am an English teacher and Literacy Leader at XXX College as well as a Masters student at Victoria University. For my thesis I am conducting research on whether changing students' views about their reading comprehension ability can be used to help students become more motivated and progress in their reading comprehension. I am seeking your permission to collect reading comprehension test data and reading attribution survey data from them.

The research is supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

This research will require that at the beginning, middle and end students complete additional 20 minute e-asTTle reading comprehension tests and at the same time complete additional versions of the Reading Attribution Survey. The provision of this data will allow me to form comparisons with another year nine class who are participating in a reading and attributional retraining intervention.

This will all happen within the normal English class and as a part of the year nine English programme. It is expected that this process will take approximately three months. Your child will not be disadvantaged in anyway, as he or she will not be missing out on any learning.

The school and your child will not be named in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and the data collected will be reported in written form. The data 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, and these findings will be shared with parents/ caregivers or a Board of Trustees meeting. The data obtained from this research may be used for conference papers and or publication.

This proposal has the approval of the Victoria University Wellington Faculty of Education Ethics Committee.

What I would from you:

- Your consent to allow xxx (participant) to participate in this study
- Your permission to collect xxx (participant's) e-asTTle and PAT reading comprehension test results from the beginning of the year
- Your permission for xxx (participant) to complete the Reading Attribution Surveys
- Your permission for xxx (participant) to complete e-asTTle reading comprehension tests

If you have any questions concerning the information sheet, please feel free to contact the principal for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR PARENTS/CAREGIVERS OF YEAR TEN STUDENTS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hello, Kia Ora, Talofa lava,

My name is Anita Titter and I am an English teacher and Literacy Leader at XXX College as well as a Masters student at Victoria University. For my thesis I am conducting research on whether changing students' views about their reading comprehension ability can be used to help students become more motivated and progress in their reading comprehension. I am seeking your permission to use your child's e-asTTle and PAT reading comprehension test results from the beginning of the year and to have your child complete a survey about their views on reading comprehension.

The research is supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

The school and your child will not be named in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and the data collected will be reported in written form. The data 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, and these findings will be shared with parents/ caregivers or a Board of Trustees meeting. The data obtained from this research may be used for conference papers and or publication.

This proposal has the approval of the Victoria University Wellington Faculty of Education Ethics Committee.

Participation in this study is completely voluntary. Should you not wish xxx (participant) to participate in all or a part of this study, please return the attached consent form and indicate what it is that you do not consent to.

Thank you very much for your help.

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR STUDENT LEADERS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hi XXX and XXX,

As well as being your English teacher and Literacy Leader here at XXX College I am also a Masters student at Victoria University. I want to find out if students' views about how well they understand what they read can be changed and whether or not that will motivate them to progress in their reading comprehension.

You have been chosen to assist because you are both outstanding young people and role models for the year nine students; you have both been successful academically and in your chosen sporting codes due to your hard work and persistence of effort. You will be required to talk with a class of year nine students about your experiences and about what you have achieved by putting in effort.

This will all happen at a time of your convenience so that you will not be disadvantaged in any way by missing out on any learning.

Mr. XXX and the Board of Trustees have agreed for this research to be conducted here at school and I am being supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

Your name and XXX College will not be used in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and will be destroyed after a period of two years.

What I need from you:

- Your permission to participate in this study

If you want to take part in this study you will need to fill in the consent form. If you have any questions concerning the information sheet, please feel free to ask me for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR STUDENTS – TREATMENT CLASS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hi class,

As well as being your English teacher and Literacy Leader here at XXX College I am also a Masters student at Victoria University. I want to find out if students' views about how well they understand what they read can be changed and whether or not that will motivate them to progress in their reading comprehension.

You have been chosen because you are a class I work with. Your participation in this study will help me learn more about your understanding of what you read. You are being invited to participate in two parts of this study. The first is to participate in a reading activity called reciprocal teaching. This activity is aimed at improving your understanding of what you read. The second is where we use reciprocal teaching at the same time as another activity called attributional retraining. This is aimed at helping you to see your reading ability in a different way. I would also like to interview some students about their experiences in these activities at three different points during the study. These interviews will take no more than thirty minutes and will be audio recorded and transcribed. You are being invited to complete three additional 20 minute e-asTTle reading comprehension tests at the beginning, middle and end of the study. At the same time, you will complete a short survey called the Reading Attribution Survey. I would also like your permission to use your e-asTTle and PAT reading comprehension results from the beginning of the year.

This will all happen within our normal English class as a part of the year nine English programme and you will not be disadvantaged in any way.

Mr. XXX and the Board of Trustees have agreed for this research to be conducted here at school and I am being supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

Your name and XXX College will not be used in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and will be destroyed after a period of two years.

What I would like from you:

- Your permission to participate in this study
- Your parents'/caregivers' permission to participate in this study
- Your permission to use your e-asTTle and PAT reading comprehension test results from the beginning of the year
- Your permission to complete the Reading Attribution Survey
- Your permission to complete additional e-asTTle tests

If you want to take part in this study I would like you to fill in the attached consent form to tell me whether or not you agree. Being interviewed is entirely voluntary and it's fine to say 'no' if you do not want to.

If you have any questions concerning the information sheet, please feel free to ask me for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter



Faculty of Education

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INFORMATION SHEET FOR STUDENTS – COMPARISON CLASS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hi class,

As well as being an English teacher and Literacy Leader here at XXX College I am also a Masters student at Victoria University. I want to find out if students' views about how well they understand what they read can be changed and whether or not that will motivate them to progress in their reading comprehension.

Your participation in this study will help me learn more about your understanding of what you read. You will be invited to complete three 20 minute e-asTTle reading comprehension tests at the beginning, middle and end of the study. You will also complete a short survey called the Reading Attribution Survey at each of these times. This information will help me to create a comparison with another year nine class who are participating in a different part of the study. I would also like your permission to use your e-asTTle and PAT reading comprehension results from the beginning of the year.

Mr. XXX and the Board of Trustees have agreed for this research to be conducted here at school and I am being supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

Your name and XXX College will not be used in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and will be destroyed after a period of two years.

What I would like from you:

- Your permission to participate in this study
- Your parents'/caregivers' permission to participate in this study
- Your permission to use your e-asTTle and PAT reading comprehension test results from the beginning of the year
- Your permission to complete the Reading Attribution Survey
- Your permission to complete additional e-asTTle tests

If you want to take part in this study you will need to fill in the consent form. If you have any questions concerning the information sheet, please feel free to ask me for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR STUDENTS - DATA COLLECTION YEAR NINE

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hi all,

My name is Ms. Titter and as well as being an English teacher and Literacy Leader here at XXX College I am also a Masters student at Victoria University. I want to find out if students' views about how well they understand what they read can be changed and whether or not that will motivate them to progress in their reading comprehension.

Mr. XXX and the Board of Trustees have agreed for this research to be conducted here at school and I am being supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

I would like your permission to use your e-asTTle and PAT reading comprehension results from the beginning of the year and I would like you to complete a short survey called the Reading Attribution Survey.

Your name and XXX College will not be used in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and will be destroyed after a period of two years.

What I would like from you:

- Your permission to participate in this study
- Your parents'/caregivers' permission to participate in this study
- Your permission to use your e-asTTle and PAT reading comprehension test results from the beginning of the year
- Your permission to complete the Reading Attribution Survey

If you want to take part in this study you will need to fill in the consent form. If you have any questions concerning the information sheet, please feel free to ask me for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter



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INFORMATION SHEET FOR STUDENTS - DATA COLLECTION YEAR TEN

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Hi all,

My name is Ms. Titter and as well as being an English teacher and Literacy Leader here at XXX College I am also a Masters student at Victoria University. I want to find out if students' views about how well they understand what they read can be changed and whether or not that will motivate them to progress in their reading comprehension.

Mr. XXX and the Board of Trustees have agreed for this research to be conducted here at school and I am being supervised by Dr. Gillian Hubbard, Victoria University Wellington, Lecturer in English Curriculum Studies School of Education Policy and Implementation, ph: 463 9690 and Dr. Michael Johnston, Senior Lecturer in Education Policy & Implementation, School of Education Policy and Implementation Victoria University, Wellington, Ph: 463 9675.

I would like your permission to use your e-asTTle and PAT reading comprehension results from the beginning of the year and I would like you to complete a short survey called the Reading Attribution Survey.

Your name and XXX College will not be used in the research, confidentiality will be guaranteed. 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 the supervisors and myself, and will be destroyed after a period of two years.

What I would like from you:

- Your permission to participate in this study
- Your parents'/caregivers' permission to participate in this study
- Your permission to use your e-asTTle and PAT reading comprehension test results from the beginning of the year
- Your permission to complete the Reading Attribution Survey

If you want to take part in this study you will need to fill in the consent form. If you have any questions concerning the information sheet, please feel free to ask me for further information.

Thank you very much for your help.

Yours sincerely

Anita Titter

Appendix E: Consent forms



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CONSENT FORM FOR PRINCIPAL and/or BOARD of TRUSTEES

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I have read the Information Sheet and I understand the contents and agree to a teacher and students from this school participating in this project.
- ☐ I understand that written permission will be sought from year nine students' parents/caregivers and passive consent will be obtained from parents/caregivers of year 10 students.
- ☐ I understand the names of the school and all participants will remain confidential to the researcher and the transcriber.
- ☐ I understand the students' participation is entirely voluntary and they are free to withdraw from the project at any time without disadvantage.
- ☐ I understand that the research findings may be published.
- ☐ I understand that I have a right to withdraw my school from the study at any time in which case any data provided will be destroyed.
- ☐ I understand that there is no remuneration or compensation for any individual's participation.
- ☐ I understand that the conversations of the interviews will be audio recorded then written.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.
- ☐ I understand that useful information of a general nature from the study will be shared with the school.

Name of Principal/Chair of BoT

Signature

Date

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FORM FOR PARENTS/CAREGIVERS OF YEAR NINE STUDENTS TREATMENT GROUP

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I agree to allow for xxx (participant) to participate in this study as a class member.
- ☐ I do not agree to allow for xxx (participant) to participate in this study as a class member.

- ☐ I agree to allow for xxx (participant's) e-asTTle and PAT reading comprehension test results to be used.
- ☐ I do not agree to allow for xxx (participant's) e-asTTle and PAT reading comprehension test results to be used.

- ☐ I agree to allow xxx (participant) to participate in an interview with Ms. Titter.
- ☐ I do not agree to allow xxx (participant) to participate in an interview with Ms. Titter.

- ☐ I understand that interviews with each pair of students will be audio recorded and transcribed and a summary checked with the child. At the conclusion of the research these will be destroyed.
- ☐ I have read the information sheet and understood the purpose of the research.
- ☐ I understand that my child's participation is entirely voluntary and they are free to withdraw from the project at any time without disadvantage.
- ☐ I understand that the research findings may be used for conference papers and be published.
- ☐ I understand that my child will not be missing any learning.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.

NAME OF CHILD _____

NAME of PARENT/CAREGIVER _____

SIGNATURE _____

DATE _____

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FORM FOR PARENTS/CAREGIVERS OF YEAR NINE STUDENTS COMPARISON GROUP

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I agree to allow for xxx (participant) to participate in this study.
- ☐ I do not agree to allow for xxx (participant) to participate in this study.

- ☐ I agree to allow for xxx (participant's) e-asTTle and PAT reading comprehension test results to be used.
- ☐ I do not agree to allow for xxx (participant's) e-asTTle and PAT reading comprehension test results to be used.

- ☐ I have read the information sheet and understood the purpose of the research.
- ☐ I understand that my child's participation is entirely voluntary and they are free to withdraw from the project at any time without disadvantage.
- ☐ I understand that the research findings may be used for conference papers and be published.
- ☐ I understand that my child will not be missing any learning.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.

NAME OF CHILD

NAME of PARENT/CAREGIVER

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FORM FOR PARENTS/CAREGIVERS OF YEAR NINE STUDENTS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I agree to allow for xxx (participant) to participate in this study.
- ☐ I do not agree to allow for xxx (participant) to participate in this study.

- ☐ I agree to allow for xxx (participant's) e-asTTle and PAT reading comprehension test results from the beginning of the year to be used.
- ☐ I do not agree to allow for xxx (participant's) e-asTTle and PAT reading comprehension test results from the beginning of the year to be used.

- ☐ I have read the information sheet and understood the purpose of the research.
- ☐ I understand that my child's participation is entirely voluntary and they are free to withdraw from the project at any time.
- ☐ I understand that the research findings may be used for conference papers and be published.
- ☐ I understand that my child will not be missing any learning.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.

NAME OF CHILD

NAME of PARENT/CAREGIVER

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FOR PARENTS/CAREGIVERS OF YEAR TEN STUDENTS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

Return this portion only if you do not want your child to participate in the study described on the attached page or do not consent to any of the following:

- ☐ I do not agree to allow for xxx (participant) to participate in this study.
- ☐ I do not agree to allow for xxx (participant's) e-asTTle and PAT reading comprehension test results from the beginning of the year to be used.

NAME OF CHILD

NAME of PARENT/CAREGIVER

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FORM FOR STUDENT LEADERS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I have read and had explained to me the Information Sheet about the research and I understand what it means. I know that I may ask questions at any time.
- ☐ I understand that the research is confidential to the researcher and the transcriber and my name will not be used.
- ☐ I understand that I am free to withdraw from the research at any time.
- ☐ I understand that the research findings may be used for conference papers and be published.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.
- ☐ I agree to participate in the study.

NAME OF STUDENT

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FORM FOR STUDENT - TREATMENT CLASS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I have read and had explained to me the Information Sheet about the research and I understand what it means. I know that I may ask questions at any time.
- ☐ I understand that if I am interviewed then it will be audio recorded and transcribed and at the end of the research these will be destroyed.
- ☐ I understand that Ms. Titter will check with me that what she has written is what I really want to say.
- ☐ I understand that the research is confidential to the researcher and the transcriber and my name will not be used.
- ☐ I understand that I am free to withdraw from the research at any time.
- ☐ I understand that the research findings may be used for conference papers and be published.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.

- ☐ I agree to participate in the study.
- ☐ I do not agree to participate in the study.

- ☐ I agree to be interviewed by Ms. Titter.
- ☐ I do not agree be interviewed by Ms. Titter.

NAME OF STUDENT

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FOR STUDENTS – COMPARISON CLASS

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I have read and had explained to me the Information Sheet about the research and I understand what it means. I know that I may ask questions at any time.
- ☐ I understand that the research is confidential to the researcher and the transcriber and my name will not be used.
- ☐ I understand that I am free to withdraw from the research at any time.
- ☐ I understand that the research findings may be used for conference papers and be published.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.

- ☐ I agree to participate in the study.
- ☐ I do not agree to participate in the study.

NAME OF STUDENT

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FOR STUDENTS - DATA COLLECTION

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I have read and had explained to me the Information Sheet about the research and I understand what it means. I know that I may ask questions at any time.
- ☐ I understand that the research is confidential to the researcher and the transcriber and my name will not be used.
- ☐ I understand that I am free to withdraw from the research at any time.
- ☐ I understand that the research findings may used for conference papers and be published.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.
- ☐ I agree to participate in the study.
- ☐ I do not agree to participate in the study.

NAME OF STUDENT

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐



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CONSENT FORM FOR STUDENTS - DATA COLLECTION

Motivation, comprehension and attribution: Are literacy strategies sufficient or do year nine students need to shift their attributional views before they can progress in reading comprehension?

- ☐ I have read and had explained to me the Information Sheet about the research and I understand what it means. I know that I may ask questions at any time.
- ☐ I understand that the research is confidential to the researcher and the transcriber and my name will not be used.
- ☐ I understand that I am free to withdraw from the research at any time.
- ☐ I understand that the research findings may be used for conference papers and be published.
- ☐ I understand that data collected will only be seen by the researcher, two supervisors and a transcriber, will be stored securely in a locked room at Victoria University, and will be destroyed after two years.
- ☐ I agree to participate in the study.
- ☐ I do not agree to participate in the study.

NAME OF STUDENT

SIGNATURE

DATE

Please indicate if you would like to receive a summary of the findings at the completion of the research. ☐