



Reciprocal Teaching: Critical Reflection on Practice

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ABSTRACT

This paper highlights reciprocal teaching as an inclusive instructional strategy that has been shown to improve reading comprehension and metacognitive skills. It provides a conceptual background to reciprocal teaching and examines its purpose, strengths and weaknesses. The notion of reciprocal teaching as an evidence-based practice is also examined with recommendations for practice.

Practice Paper

Keywords: Comprehension, evidence-based practice, metacognition, reciprocal teaching

A BRIEF DESCRIPTION

Reciprocal teaching is an instructional practice identified as a way of improving reading comprehension through explicit teaching of skills needed for metacognition. It is also recognised as an example of an inclusive practice (Alton-Lee, Westera & Pulegatoa-Diggins, 2012; Palincsar & Brown, 1984; Rosenshine & Meister, 1994; Westera, 2002). Palincsar, Brown and Klenk developed the concept of reciprocal teaching between 1984 and 1991 as a teaching strategy for meeting the needs of students who were strong decoders, but with poor comprehension skills. Over time, reciprocal teaching has been shown to be effective for diverse groups of learners: pre-readers, students with limited comprehension and decoding skills, English language learners, and students with specific learning difficulties.

Reciprocal teaching focuses on four thinking strategies: predicting, clarifying, questioning, and summarising. It is an amalgamation of reading strategies that are believed to be used by effective readers and follows a dialectic process to enable metacognitive thinking and to empower students to take ownership of their learning in a systematic and purposeful process. During a reciprocal teaching session, teacher and students use prior knowledge

and dialogue to construct a shared understanding of the text and to build reading comprehension. Teachers monitor the discussion and provide cognitive scaffolding through a shared language related to the four aforementioned thinking strategies. Research on reciprocal teaching has shown that there are improved comprehension results and transfer of skills to other curriculum areas (Brown & Campione, 1992; Palincsar & Klenk, 1992; Westera, 2002). It is also noted that the dialogical approach is inclusive of students with different abilities and students who have diverse sociocultural experiences as all perspectives are embraced in a reciprocal discussion (Soto, 1989, cited in Arbor, 2013).

CONCEPTUAL BACKGROUND

Social Constructivism

Reciprocal teaching as an instructional practice has developed out of research related to monitoring and constructing meaning from text (Westera & Moore, 1995). It aligns closely to social constructivism and, in particular, developmental theories of learning described by Vygotsky (Kozulin, 1986). Vygotsky (1978) linked dialogue and metacognition in explaining how individuals develop understanding of concepts. He believed that the process of learning involved moving into a zone of proximal development which is supported by another individual in dialogue with the learner. Through dialogue the learner is able to shape current knowledge (schemas) to construct new ideas and understanding. The process is supported by scaffolds which provide timely and needs-based support, allowing the learner to move from one space of understanding to another across the zone of proximal development (Kozulin, 1986). Dialogue happens in reciprocal conversations which take place in small groups of learners with teacher and students taking turns at leading the discussion. Initially the expert (teacher) models, paraphrases and questions, then gradually students assume roles as dialogue leaders. Understanding of the text is co-constructed through discussion, with each learner using a prescribed

framework to guide interactions. Within these systems of instruction, the students learn thinking strategies for deeper levels of comprehension at their own rate in the presence of experts and more-able peers. They participate naturally at, or just above, a level they are capable of, in their zone of proximal development (Palincsar & Brown, 1984). In this way reciprocal teaching is strengths-based and child-centred.

Ecological

Reciprocal teaching sits comfortably within an ecological approach to practice (Bronfenbrenner, 1979) as through dialogue, students are empowered to bring familial, social and cultural experiences to the reciprocal conversations (Alton-Lee, Westera & Pulegatoa-Diggins, 2012; Palincsar & Brown, 1984; Rosenshine & Meister, 1994). Effective implementation of reciprocal teaching uses thinking strategies and 'talking frameworks' to scaffold students' use of their own language and make connections with their cultural knowledge, their everyday experience, personal perspectives and text (Alton-Lee, Westera & Pulegatoa-Diggins, 2012).

Cooperative Learning

Reciprocal teaching is a cooperative learning strategy. It requires collaboration and group thinking while emphasis is placed on students providing instructional support for each other. An outcome of reciprocal teaching is a sense of community where students feel cared about and valued (Oczkus, 2010). Oczkus attributes this to being listened to and the development of a learning culture that values growth through experimentation and enquiry. "Reciprocal Teaching makes it okay for students not to understand text. The emphasis is not on their lack of understanding: in fact, lack of understanding is seen as a natural condition for learning" (Alton-Lee, Westera & Pulegatoa-Diggins, 2012, p. 9). Difficulties in understanding are ascribed to challenges in the text rather than student inadequacy. The learning emphasis is on the emergence of strategies that provide a way to understand through interaction with diverse others, expert scaffolding and anticipation of expected competence (Westera, 2002). Through interaction in mixed-ability groups, students who are developing skills in comprehension are supported by the social context and reciprocal teaching frameworks. They engage at their level and are able to observe and learn from more competent peers who, with the teacher, model higher level involvement.

Culturally-Responsive

Reciprocal teaching sits comfortably with Kaupapa Māori thinking, particularly in relation to collective achievement and interdependence, hui wananga, critical engagement and opportunity for cultural connection. It is reflective of cultural themes such as 'Nau te rourou, naku te rourou, ka ora ait e iwi (with your food basket and my food basket, there will be ample). Reciprocal teaching aligns with values outlined in the *Educultural Wheel* (Macfarlane, 2004) such as rangatiratanga, kotahitanga, manaakitanga and whanaungatanga through collaboration, affirmation, encouragement and perseverance. In addition, the routines of reciprocal teaching reflect views on learning from a tikanga Maori perspective such as shared authentic group tasks, interaction rituals such as turn taking, prompting and repeating, opportunities for tuakana/teina (older/younger sibling) connectedness and scaffolding, shared leadership and responsibility, and teacher/learner interchangeability (Tangaere, 1997). Similarly, these values resonate with Pasifika cultures.

Cognitive Psychology

Cognitive strategies used in reciprocal teaching are grounded in cognitive psychology and, in particular, information processing models of learning (Palincsar & Brown, 1984; Sternberg & Sternberg, 2012). Sternberg's (1996) *Triarchic Theory of Intelligence* identifies three parts to information processing – metacomponents, performance components and knowledge acquisition components. These parts work together to plan, monitor and adjust performance for mastery of a task. Reading comprehension is an interaction between decoding, thinking about the text and cross-checking with what is already known. Westera (2002) identified reciprocal teaching as an example of metacognitive strategy instruction with an emphasis on thinking about thinking and skills for self-regulated learning during the reading process. Palincsar and Brown (1984) described information processing in skilled reading as 'debugging'. A skilled reader will allocate time and effort to the task of untangling comprehension failures, while less-skillful readers, in their opinion, do not seem to use monitoring strategies well, and do not seem to allocate the time and effort to clarifying comprehension failures through the use of deliberate and active processing strategies. In information processing terms, skilled readers are able to move fluidly between performance components and meta-components to rapidly construct meaning and monitor for understanding. Brown, Palincsar and Armbruster (1984) identified a number of information-processing strategies that skilled readers use in the process of

clarification: explicit and implicit understanding of the purpose for reading; activation of relevant background knowledge; focusing attention on important content; critical evaluation of content for internal consistency and compatibility with prior knowledge and common sense; periodically reviewing and interrogating self for understanding, and finally, testing inferences and predictions. These strategies underpin the four concrete activities of predicting, clarifying, questioning and summarising, that framework reciprocal teaching to foster comprehension and monitoring for understanding (Palincsar & Brown, 1984).

Purpose of Reciprocal Teaching

Over time, reciprocal teaching has developed three main purposes. Firstly, it is a framework for explicit instruction and the practice of four specific comprehension fostering strategies to develop the self-monitoring central to effective comprehension. Secondly, it uses a clearly-defined process for interactive engagement. This process has been shown to ensure that learning is maintained over time, is generalised across settings, and is transferable within conceptual domains. Thirdly, it is a vehicle for inclusive practice (Westera, 2002).

Framework for Explicit Instruction

Reciprocal teaching is a framework for explicit instruction of comprehension strategies. It is strategically designed to meet the needs of low-progress readers who have poor comprehension skills. Strategies for effective comprehension are explicitly taught, modelled and practised within deliberate conversations with others to predict, clarify, question and summarise. Interactive feedback on the efficacy of thinking and instruction in why, when and where comprehension activities should be applied are delivered while reading.

Process for Interactive Engagement

Palincsar and Brown (1984) designed reciprocal teaching using an interactive instructional model that provoked novice learners to engage. They recognised that by scaffolding learners to be active then learning-transfer and long-term sustainability were more likely to be achieved. Reciprocal teaching uses dialogue to empower the learner. Palincsar and Brown describe a gradual shifting from supportive others acting as models, critics and interrogators to self-regulation and self-interrogation. Westera (2002) identified further that metacognitive instruction, as used in reciprocal teaching, had a positive impact on both the amount of reading and dialogue about reading while improving the acquisition of content, self-efficacy and motivation to learn.

Inclusive Practice

Westera (2002) recognises reciprocal teaching as an inclusive teaching model because it combines three practices that are identified as effective practices for inclusion: metacognitive strategies, cooperative learning, and authentic context. In this way she believes that reciprocal teaching has a “wide capacity to cater for academic, social and cultural heterogeneity in inclusive classrooms” (p. 51). She also believes that through reciprocal teaching and the growth of self-regulatory skills, all students will be able to participate more fully and independently in learning activities. Brown and Palincsar (1989, cited in Westera, 2002) define the semi-ritualised participation structures of reciprocal teaching and observational learning opportunities as especially enabling for students who have difficulty accessing the curriculum.

Westera (2002) recognises the explicit teaching strategies as having a strong influence on reciprocal teaching as an inclusive practice. She discusses how explicit teaching differs from direct teaching in that it comprises flexible teaching of content, modelling, guided practice, independent practice, feedback, meaningful connection to real life, and active learner involvement. While recognising considerable overlap between explicit and direct teaching, Westera distinguishes direct teaching as a teacher-controlled process with control maintained over pace, sequence and content of a lesson. Step-by-step instructions requiring mastery at each step and teacher-controlled processes for readjustment of student errors is in contrast to an explicit teaching model which is self-differentiating. Westera is mindful of explicit teaching as being ‘just in time’ and responsive to learners comprehension and participation needs. In reciprocal teaching conversations, each participant operates at the comprehension and participation levels that they feel comfortable with while being challenged by the thinking of others. Developing-readers internalise these social experiences in an inclusive way and gradually adopt the reasoning and regulatory practices of the supportive others. Eventually, learners use these practices independently when they read on their own.

Strategic Alignment

Reciprocal teaching aligns with key strategic documents currently within New Zealand government policy. As a constructivist and socio-cultural approach to learning it sits comfortably with the *New Zealand Curriculum* (Ministry of Education, 2007), *The Literacy Learning Progressions* (Ministry of Education, 2010), *Ka Hikitia Maori Education Strategy* (Ministry of Education, 2013a), the *Pasifika Education*

Plan (Ministry of Education, 2013b), *Meeting the Needs of Gifted and Talented Students in New Zealand Schools* (Ministry of Education, 2012), and *Success for All - For Every School, Every Child 2010-2014* (Ministry of Education, 2010).

The guiding vision of the *New Zealand Curriculum* is to develop young people who are confident, connected, actively involved, life-long learners. *Ka Hikitia- Managing for Success: The Maori Education Strategy 2008-2012* called for presence, engagement and achievement of Maori within our education system. The vision of *Ka Hikitia – Accelerating Success 2013–2017* is Māori enjoying and achieving education success as Māori. At the centre of the *Pasifika Education Plan 2013 – 2017* are reciprocal relationships focused on respect, service leadership, spirituality, belonging, family, love, and inclusion. The goals of the *Pasifika Plan* include connectedness and close alignment between cultural environments and learning environments. It calls for strategies that acknowledge the multiple perspectives and many voices of Pasifika communities. The document *Meeting the Needs of Gifted and Talented Students in New Zealand Schools* (Ministry of Education, 2012), calls for curriculum programmes that recognise, value and empower gifted learners to develop their exceptional abilities and qualities. It calls for equitable access to differentiated and culturally-responsive provisions. The Literacy Learning Progressions recognise that the pathway to literacy learning is developmental, is shaped by social and cultural practices, and students take individual and multiple pathways in their literacy learning. *Success for All - Every School, Every Child* is the Government's vision and work programme for an inclusive education system for students with special education needs. It calls for removing barriers to presence, participation and achievement, and calls for effective teaching approaches that create inclusive learning environments for all students.

Reciprocal teaching delivers an overarching philosophy of participation, contribution, critical reflection and inclusiveness within the context of *ako*. *Ako* is about knowing where students come from and building on what students bring with them. Similarly, reciprocal teaching embraces students' experiences and builds on the knowledge and understanding that they bring to the text. Alton-Lee et al. (2012) noted that reciprocal teaching can provide "opportunities for *mana tangata* (development of self-esteem through contributing), *mana motuhake* (development of independence and autonomy), and *mana reo* (development of communication) [while also] fostering positive and inclusive peer learning communities" (Alton-Lee et al., 2012, p. 4).

Reciprocal teaching has also been recognised for building learner capacity in the key competencies: thinking; using language, symbols and text; managing self; relating to others, and participating and contributing (Alton-Lee et al., 2012). Through collaborative dialogue, shared text and group exploration of principles, ideas and themes the reciprocal teaching groups develop to be a learning community. Within learning communities students not only develop comprehension skills but also learn structures for thinking and how to interact meaningfully with other learners to build collective understanding. Reciprocal teaching is also readily incorporated in most learning areas of the curriculum (Alton-Lee et al., 2012; Arbor, 2013; Rosenshine & Meister, 1994).

Reciprocal teaching lifts achievement. New Zealand research shows that reciprocal teaching is effective with culturally-diverse students in primary and secondary classes as outlined in separate studies by Gilroy and Moore (1988), Kelly, Moore and Tuck (1994), Le Fevre, Moore and Wilkinson (2003) and Smith, Timperley and Francis (2011, all cited in Alton-Lee, Westera & Pulegatoa-Diggins, 2012). Reciprocal teaching involves the development of skilful comprehension through inquiry and self-reflection. It is a self-paced programme where students are scaffolded to work in their zone of proximal development. Reciprocal teaching has been shown to have high impact in improving reading comprehension, metacognition, social anticipation and self-management skills for students of diverse abilities (Alton-Lee, Westera & Pulegatoa-Diggins, 2012).

Reciprocal teaching is nurturing and inclusive. The engagement processes provide feedback for learners on the efficacy of their actions through responsive and intensive peer support in an authentic learning situation. Alton-Lee, Westera and Pulegatoa-Diggins (2012) identified that through the intensive peer support provided by the group, students have access to more responsive support than they may have in a whole-class environment.

Evidence-Based Practice

Evidence-based practice has been described as grounded in three principles: *tika*, *pono* and *aroha* (Macfarlane, 2011). *Tika* refers to research literature that is culturally-grounded, relevant and realistic. *Pono* is inclusive of practitioner knowledge and skill so that actions have integrity, are reasoned, just and fair, whilst *aroha* relates to interactions and consultations with *whanau* that are reciprocal, respectful and compassionate. Research in a New Zealand context points favourably toward the use of

reciprocal teaching as an evidence-based practice grounded in tika, pono and aroha (Alton-Lee, Westera and Pulegatoa-Diggins, 2012). In particular, the New Zealand studies have identified learning effectiveness with a range of cultural groupings and have reported teacher, student and whanau insights into the effectiveness of reciprocal teaching.

Hattie's (2009), meta-analysis of 38 international studies ranked reciprocal teaching as the third highest-impact strategy out of 49 teaching strategies, and found an overall effect size of $d = 0.74$. Smith, Timperley and Francis (2011), in an unpublished manuscript researching reciprocal teaching and the deeper features of reading comprehension, reported an overall effect size of $d = 1.5$. Palincsar and Brown (1984), when developing the programme, found significant improvements in the quality of students' ability to summarise and question as well as gains on criterion and standardised tests of comprehension. They also found that the new learning transferred to novel tasks requiring skills of summarising, questioning and clarifying.

In two studies involving a group of Year 9 secondary students and a group of Year 4 – 5 primary students, Westera (2002) found significant gains in reading comprehension and metacognitive awareness. She reported an effect size of $d = 1.1$ and described student perceptions of improvement in reading and reading strategies. Similarly, she reported that teacher-feedback supported the value of reciprocal teaching for professional development and reported favourably on the feasibility of implementation in regular class programmes as an inclusive practice. On the basis of her literature review, Westera concluded that reciprocal teaching "appeared to be empirically and conceptually robust as an inclusive practice, comprising a combination of best inclusive practices" (Westera, 2002, p. 138).

In a review of 16 studies using reciprocal teaching, Rosenshine and Meister (1994) found a median effect size of 0.32 when standardised assessments were used to evaluate comprehension and 0.88 when experimenter-developed comprehension assessments were used.

Westera (2002) also noted that the efficacy of reciprocal teaching was dependent on appropriate adaptations to meet the needs of diverse students. She cited studies that used tape-assisted reading material to support poor comprehenders who were also poor decoders (Le Fevre, Moore & Wilkinson, 2003, cited in Alton-Lee, Westera & Pulegatoa-Diggins, 2013) and bilingual delivery of reciprocal teaching to support comprehension development for bilingual learners (Fung, Wilkinson & Moore, 2003,

cited in Alton-Lee, Westera & Pulegatoa-Diggins, 2012). In both these studies the comprehension gains made by the students were comparable with gains demonstrated in previous studies.

Rosenshine and Meister (1994) reviewed reported assessment for students' achievement in the four comprehension strategies - prediction, clarification, questioning, and summarising. They found that of the 16 studies they reviewed only six assessed questioned generation, and found no difference between experimental group and control group, six assessed summarisation, and four found that the reciprocal group made significantly stronger summaries, whilst one assessed prediction with a significant difference favouring the experimental group over the control. The assessments in these studies were gathered after the reciprocal intervention, using a researcher-developed tool. The original Palincsar and Brown (1984) study attempted to assess the quality of student's participation from the reciprocal dialogues using a rubric for analysis. They found that the quality of the student questions and summaries improved significantly from early sessions to later sessions.

Although most of the research described above has a quantitative focus and follows recent trends to report effect size, many of these studies also report comments by practitioners and students that refer to power-sharing, responsiveness and affirmation of student background experience. Westera (2002) noted ecological impacts such as engagement, group cohesiveness, changing teacher-attitudes toward power-sharing and suggests that reciprocal teaching may be a vehicle for school-wide change toward more inclusive practices. Palincsar (2007, cited in Alton-Lee et al., 2012) explained that reciprocal teaching was a "way to give voice to children in classrooms" (p. 10). Palincsar and Brown (1984) refer frequently to the connections to personal experiences that are generated through effective implementation of the reciprocal teaching strategies. Westera (2002) identifies whanau connection as an area for further development with more explicit fostering of connections through choice of reading material and inclusion of cultural practices and language. She suggests exploring Maori cultural concepts that link to each of the components of reciprocal teaching to enable them to be understood within the context of an indigenous world-view. Further development in these areas will strengthen the pono and aroha components of the evidence base for reciprocal teaching.

IMPLEMENTATION

There are two aspects to implementation. Firstly, there is the development of group structures,

routines and resources, and secondly, there is the development of teaching skills for facilitation of reciprocal conversations.

Group structures, routines and resources:

Originally, Palincsar and Brown (1984) developed the reciprocal teaching process with a group of six students who were identified as adequate decoders and poor comprehenders while reading grade-appropriate text. The students were divided into three groups each with an adult instructor. The role of the instructor was to support the reciprocal conversations through techniques such as prompting, instructing and modifying the task.

Since Palincsar and Brown's (1984) original model, there have been many variations in how reciprocal teaching is delivered. Westera (2002) implemented reciprocal teaching with groups of three to six, delivered by expert teachers and support staff over 12-16 sessions. Smith, Timperley and Francis (2011, cited in Alton-Lee, Westera, Pulegatoa-Diggins, 2012) used groups of four to five students supported by teacher-aides. This study involved 15 sessions over five weeks and each session lasted approximately 25 minutes. Fung et al. (2003) introduced a second language, and students participated in the reciprocal teaching sequence using English and Mandarin on alternate days. Gilroy and Moore (1988) used 20 to 25 minute sessions over 21 days. Rosenshine and Meister (1994), investigating 19 studies, found no relationship between effect size and size of group, as well as no evidence of a relationship between the number of sessions and significance of comprehension improvements. Westera (2013) did note that more than 12 sessions were needed to get a significant result. Optimal group size and organisation does not seem to have been researched to date.

Rosenshine and Meister (1994) identified several studies that explicitly taught the comprehension strategies prior to engaging in the reciprocal conversations. This was different from Palincsar and Brown's (1984) initial development which introduced the strategies during the reciprocal conversations. Analysis of studies using the two approaches showed little difference in achieved outcomes. Rosenshine and Meister (1994) also found that there were no differences between groups of students who were instructed as part of a classroom programme and groups of students who were instructed in targeted remedial programmes.

The aspect of reciprocal teaching that has remained constant across studies is the conversational routine which follows a sequence of text introduction through prompting for prior knowledge and predicting,

reading, then clarifying, questioning, summarising and further predicting. The four comprehension strategies are developed during the reciprocal conversation. Some studies have reported two, three, or ten strategies but Rosenshine and Meister (1994) found no significant difference in comprehension achievement between these studies and those that used four strategies, although it must be noted that the number of studies with variations is very low and in some cases only included one study.

A reciprocal conversation has a clearly-defined format supported by a 'talking frame.' Students read material section by section and then engage in conversation using each of the four comprehension strategies. Initially, the leader uses the 'talking frame' to invite the use of the four comprehension strategies but the aim is to develop independent and self-monitored leadership. The leadership role shifts around the group with the reading of each paragraph.

During the initial stages of reading a text, the teacher leads the explicit teaching of routines and skills, then models and probes for understanding during the reciprocal conversations. Students gradually assume responsibility on subsequent text and in this way the ownership of the conversation is gradually transferred to the students. The teacher continues to provide feedback, additional modelling, coaching, hints and explanation. The teacher makes formative judgements about developing skills and adjusts feedback and feed-forward accordingly. The emphasis throughout the conversation is on cooperative effort to bring meaning to the ideas in the text and students are guided in providing instructional support for each other. The processes are reflective of a learning community.

Resources to support a reciprocal conversation include age-appropriate text levelled slightly above the decoding age of the weakest reader and the 'talking frame' outlining appropriate sentence starters for leading conversation related to each of the four comprehension strategies. Additional resources can be developed to meet the learning characteristics of individual learners such as tape-assisted reading and language builders.

A range of qualitative and quantitative methods have been used to monitor effectiveness during implementation of reciprocal teaching. Palincsar and Brown (1984) measured changes in comprehension achievement through five comprehension probes requiring students to read a passage and answer ten questions. These probes were administered before, several times during, and after intervention. A standardised reading assessment and a transfer test involving a novel task but assessing skills similar to reciprocal teaching skills were also used pre- and

post-intervention to measure overall performance and generalisation. Other assessments have included analysis of reciprocal dialogue to measure changes in skill level with each of the four comprehension strategies and some studies have attempted to observe and evaluate teacher instruction in reciprocal teaching. These assessments are not frequently reported and Rosenshine and Meister (1994) note that “the lack of observation and evaluation of instruction is a common problem among studies in which cognitive strategies are taught” (p. 488).

Teaching Skills for Facilitation of Reciprocal Conversations

The process of implementation is crucial to successful outcomes for students. Alton-Lee, Westera and Pulegatoa-Diggins (2012) recognised that while teachers could learn reciprocal teaching well in a relatively short time, on-going professional learning and support for teachers is important. Westera (2002) described her professional learning approach as school-based, research-informed and collaborative. She outlined planning for implementation that included consideration of how reciprocal teaching fits within usual classroom programmes, grouping decisions based on student’s strengths and needs, and design of materials and adaptations for individual needs. Westera believes that to effectively implement reciprocal teaching, teachers need to understand underlying theory and the practical steps needed. The content of her professional development included theoretical discussion of comprehension instruction and reciprocal teaching, scaffolding for reciprocal teaching, exploration of how to teach for maintenance and generalisation, attention to implementation routines, and discussion of data-gathering. Arbor (2013) and Oczkus (2010) have identified several key teaching strategies that teachers need to be familiar with such as thinking aloud, scaffolding and questioning for metacognition. Arbor has developed a coaching rubric for feedback related to modelling, scaffolding, facilitation of cooperative learning and questioning for metacognition. She also suggested that as part of the professional development teachers might watch recorded sessions, examine transcripts of reciprocal teaching dialogues, role-play reciprocal conversations and, following professional development, teachers and trainers co-teach a lesson. Alton-Lee, Westera & Pulegatoa-Diggins (2012) report that teachers who participate in reciprocal teaching professional development value the knowledge gained and in particular comment on their increased awareness in recognising specific skills needed for effective comprehension.

Strengths and Limitations of Reciprocal Teaching

The research and literature is strongly supportive of reciprocal teaching as an effective practice for teaching comprehension skills. Alton-Lee, Westera and Pulegatoa-Diggins (2012) describe reciprocal teaching as a ‘high yield’ intervention and Westera (2002) highlights that reciprocal teaching shifts teaching-attention away from questioning for comprehension to explicitly teaching comprehension-fostering skills.

Reciprocal teaching is inclusive and enables teachers to use evidence gained through the reciprocal conversations to continually adjust and target teaching to meet the needs of diverse students. It is viewed as a pedagogical practice that facilitates caring, inclusive and cohesive learning communities whereby teachers work smarter not harder (Alton-Lee, Westera & Pulegatoa-Diggins, 2012; Palincsar & Brown, 1984; Westera, 2002). There is a strong alignment between curriculum goals and strategic directions for targeting priority students.

Reciprocal teaching facilitates student ownership of learning. Soto (1989) described how reciprocal teaching was a process for the social construction of knowledge where students collaborate with the teacher and each other to construct meaning from text. Through this process learners are able to focus on information in the text that is meaningful to them. Paris and Winograd (1990) highlighted that the close relationship between metacognitive awareness, self-regulation and self-perception was a strength of reciprocal teaching for students with special education needs.

The close alignment of reciprocal teaching structures with *ako*, and *tuakana/teina* concepts position reciprocal teaching as a strong component of culturally-responsive classrooms. Bishop (2001) emphasised student voice and power sharing as features of *ako* and necessary to effectively engage Maori students. Similarly, with Pasifika and other cultural groups, reciprocal teaching has the potential to demonstrate understanding and respect for diverse world-views. The oral nature of reciprocal teaching links with Maori and Pasifika oral traditions and the concept of ‘storying’ (Smith, Timperley & Francis, 2011).

Reciprocal teaching is also noted for effective generalisation of skills to other curriculum areas and school context. Brown and Campione (1992) found that students who had experienced reciprocal teaching gained an average of two years on standardised test scores in other academic areas. In Westera’s (2002) study, teachers reported increased self-directed

learning, more confident and open-to-learning attitudes, improved attendance, improved teacher/pupil relationships and the use of strategies in other contexts. Reciprocal teaching has been adapted for use in a wide range of curriculum areas including literacy instruction and social studies (Palincsar & Brown, 1984) as well as science (Stoddart, Pinal & Canady, 2002), mathematics (van Garderen, 2004) and physical education (Brown & Campione, 1992; Byra, 2006).

Reciprocal teaching is a highly-adaptable teaching tool. It has been used with a range of students at all levels of development – elementary to secondary to adults (Arbor, 2013; Rosenshine & Meister, 1994). It has been used for small groups of learners (Alton-Lee, Westera & Pulegatoa-Diggins, 2012; Palincsar & Klenk, 1992) and whole classes (Smith, Timperley & Francis, 2011, cited in Alton-Lee et al., 2012). It has also been shown to be effective for diverse cultural groups (Fung, Wilkinson & Moore, 2003; Gilroy and Moore, 1988, both cited in Alton-Lee et al., 2012) and academically-diverse learners (Rosenshine & Meister, 1994).

The success of reciprocal teaching as a tool for diverse learners, groups and settings is also its weakness. Many variations in relation to delivery and target groups have been researched and there is little agreement as to how reciprocal teaching should be delivered although Rosenshine and Meister (1994) have identified that variations have little impact on comprehension achievement.

Rosenshine and Meister (1994) also caution that some of the positive results of reciprocal teaching are supported by studies with small sample sizes. Alton-Lee's Best Evidence Synthesis is based on six New Zealand studies with target populations ranging from 10 to 35. The initial research by Palincsar and Brown (1984) was based on 24 students with six students participating in the reciprocal teaching trial. The second study described by Palincsar and Brown (1984) involved 21 students. The danger of small sample sizes is to over-infer from the results. Small sample sizes are subject to strong influences from outlier results and are not necessarily representative of larger populations. The number of repeated reciprocal teaching studies with consistently strong results does help to mitigate the problem of small sample size.

Another possible weakness of the reciprocal teaching research is its relevance to whole-classroom instruction. Most of the reported research involves low teacher/pupil ratios. The initial Palincsar and Brown (1984) study reported ratios of 2 to 1, and Westera (2002) reported staffing ratios of 1 to 6. It has to be asked whether low teacher/pupil ratios or reciprocal teaching processes had the greater

influence on results. Then there is the question of whether reciprocal teaching could be managed in a whole-class situation without other adult support.

Finally, it must also be noted that reciprocal teaching is a 'co-constructive approach' to teaching and learning and may not align well with an individual teacher's practice. Not all teachers are comfortable as facilitators of learning rather than directors of learning.

In conclusion, reciprocal teaching seems to be a powerful evidence-based approach to comprehension development for diverse learners who are strong decoders and weaker comprehenders. The three evidence-based components of tika, pono and aroha are evident throughout the research and descriptions of implementation projects. Research is reflective of best-practice and inclusive of teacher and student voice. Through reciprocal teaching there is potential to develop a "pedagogy of relations" (Bishop, 2009, p.167) that will have benefits for Maori, Pasifika, other cultural groups, students with special needs, students with high abilities, and students who are already achieving as expected. Reciprocal teaching shifts the balance of power towards learners and enables student voice through conversations that acknowledge the experiential base that a learner brings to the learning. It is a highly-effective inclusive practice.

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Ruth McAllum has been working as an RTLB with the Central West Auckland Cluster for the past seven years where she has the role of Practice Leader. She completed the Post Graduate Diploma in Specialist Teaching in 2013 following on from a Masters of Teaching and Learning. Her interest in reciprocal teaching and learning relationships was kindled in the classroom where she focused on facilitating learning partnerships with children. Reciprocal learning relationships are now an important focus of her work with students, teachers and RTLB colleagues.

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