THE IMPACT OF A SOCIAL-COGNITIVE TEACHING STRATEGY ON STUDENTS WITH LEARNING DIFFICULTIES

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Learning difficulties, social-cognitive intervention, community of inquiry, metacognition, self-regulated learning, academic self-efficacy, reading comprehension.
Abstract

This study investigated the impact of a social-cognitive teaching strategy, the community of inquiry, on primary school students who had previously been identified as having learning difficulties. A community of inquiry involves interactive classroom discussion focusing on challenging questions, and has been shown to enhance metacognitive skills and nurture independent thinking in a social context. These outcomes should have particular relevance for students with learning difficulties, who typically need support in developing cognitive strategies. Although there have been many studies on the complex nature of learning difficulties and considerable research on the benefits of participation in a community of inquiry, few studies have investigated the community of inquiry as an intervention with potential for enhancing the academic capability of children with learning difficulties.

Before and after engaging in the nine-month intervention, the six Year 4 (eight to nine years of age) students completed informal measures of their self-regulation skills and perceptions of academic self-efficacy, as well as formal measures of their reading comprehension skills. Additional data included observations recorded by the class teacher and the researcher. The findings revealed that the students gained in thinking ability and cognitive self-reliance. There was progress in their ability to use cognitive strategies and they showed more self-regulation in their learning. There were positive changes in academic self-efficacy as they gained confidence in their ability to succeed. In addition, the students’ reading comprehension skills improved. Although the degree of development varied across the group, the results indicated that all six students benefited from the scaffolded opportunities for intellectual and social exchange afforded by the community of inquiry procedures. While the findings of this study have implications for school intervention for students with learning difficulties, they also provide a basis for future research on cognitive development and the social-emotional benefits arising from participation in a community of inquiry.
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List of Abbreviations

Community of inquiry (COI)
Self-regulated learning (SRL)
Academic self-efficacy (ASE)
Interactive student questionnaire (ISQ)
Semi-structured interview (SSI)
Think-aloud analysis (TAA)
Collaborative observations synopsis (COS)
National Assessment Program – Literacy and Numeracy (NAPLAN)
Australian Curriculum, Assessment and Reporting Authority (ACARA)
Queensland Association of Philosophy in Schools (QAPS)
Federation of Australasian Philosophy in Schools (FAPSA)
Statement of Original Authorship

The work contained in this thesis has not been previously submitted for a degree or a diploma at any other education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference is made.

Signature:

Date: November 7, 2013
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Chapter 1: Introduction

This study investigates the Community of Inquiry (Lipman, 1978) and its impact on academic functioning of students with learning difficulties. Learning difficulties comprise an area of concern in most school learning environments and are commonly addressed by individual or small group intervention methods. The intervention used in this research is an inclusive, social-learning method during which the children learn in a whole class context. The community of inquiry (COI) is a social-cognitive learning intervention based on classroom interactive inquiry and is claimed to improve thinking and reasoning (Trickey & Topping, 2006). Specifically, Curtis (2012) identified enhancements in metacognition, self-regulation and self-esteem, while Jenkins and Lyle (2010) observed a positive impact on higher-order thinking among low-attaining pupils. Thinking processes involving metacognition rate highly among the skills that many children with learning difficulties lack (Westwood, 2004). Therefore the COI may have the capacity to positively influence learning for these students.

This chapter provides an overview of the study including its purpose and significance. Section 1.1 presents the background to events leading up to the planning of this research, Section 1.2 provides the context and design of the study, and Section 1.3 explains the study’s purpose and describes the methods used. Section 1.4 discusses the significance of the study, and Section 1.5 outlines the nine chapters in the thesis. Section 1.6 provides a glossary of terms used in this document, and Section 1.7 provides a chapter summary.

1.1 BACKGROUND

Across the four decades of my involvement in education, with extensive periods of teaching or administration in Australia, New Zealand, Canada, and the United Kingdom, I have had an unwavering interest in the way children learn. This interest naturally extended to my own children, and watching them grow reinforced the belief that social interaction was a vital ingredient in their cognitive development and the extension of their natural curiosity and learning skills. Through the Queensland Association of Philosophy in Schools (QAPS) I became interested in the social-
cognitive theories of Vygotsky (1978) and the impact of social interaction on children with learning difficulties. Perhaps a dialogic, oral language approach would benefit these students. In the busy environment of the classroom, considered verbal exchange is often constrained and children with learning difficulties, many of them reticent, have little opportunity to express their ideas. Following several years of advisory work in rural schools fostering social interaction with and among students, my interest focused exclusively on students with learning difficulties. These experiences enabled me to explore further the reasons why some children fail and to seek to understand better the complexity of this widespread problem.

It became evident that learning difficulties is a controversial field of study, with many unresolved questions pertaining to causality and definition (Hammond, 1996). Learning difficulties is influenced by a complex range of associated issues, any one or combination of which may affect a child’s capacity for learning (Snowling, Hulme, Bailey, Stothard, & Lindsay 2011). In this investigation, the term “learning difficulties” is used to describe those children who are not making adequate progress within the curriculum (Westwood, 2004). This research is the culmination of an ongoing interest in the complex nature of learning and my perception that social-cognitive intervention methods may be a positive means of addressing the issue of learning difficulties.

1.2 CONTEXT AND DESIGN

The context of this study encompasses two key areas: (1) learning difficulties in young students, and (2) the impact of the COI, a social-cognitive intervention method. The aim of the study is to investigate a whole class teaching strategy as a potential means of improving the academic skills of young students identified with learning difficulties. This intervention strategy is the community of inquiry (COI) which forms the methodology for the literature-based program, philosophy for children, designed to improve children’s thinking (Lipman, 1978). If improvement for these students can be achieved in the context of a regular classroom program, then the need for individualised interventions may be reduced. The claimed benefits of the COI include better thinking processes, increased self-esteem and improved confidence (Millett & Tapper, 2012). Inclusive approaches would seem more appropriate for students with learning difficulties who frequently exhibit low self-confidence and limited thinking strategies. This study examines the influence of the
COI when experienced over nine months by six children previously identified as having learning difficulties. The program was implemented in an inclusive whole class context. The focus was on the COI approach, and the impact of its social-cognitive, interactive dialogic procedures on children with learning difficulties within a typical classroom setting.

Data were collected pre- and post- intervention by means of multiple methods including interviews, questionnaires, tests, and observations. Over the duration of the program, continuous observations were also documented to provide further information about the participants’ development. The COI lessons were implemented twice weekly as part of the normal classroom program and they extended over a nine-month period of the school year. The lessons were conducted by the researcher who had been trained in the process, while the classroom teacher assisted by recording and documenting observational data including video recording. This allocation of roles was due to the teacher’s lack of training in COI procedures. The training for conducting the COI is extensive requiring prolonged group workshops and lectures on COI, and subsequently the practical implementation of the program run in a trial school over several months. The classroom teacher did not have the background of experience for conducting the program over the duration of the study. Observations of the interactive COI discussions across all students in the class were ongoing with emphasis placed on the six research participants. A central element of this investigation was the context of inclusivity for the participants with the focus on the impact of social interaction on their learning. This aspect underpinned the design of the study as well as the key question: What impact does participating in the COI process have on students with learning difficulties? The question responds to a need for alternative intervention approaches, as stated in Section 1.1, and may provide another perspective on the multi-faceted question of student failure.

The reasons that children fail are complex (Daly, Witt, Martens, & Dool, 1997). The causes broadly encompass factors within the learning environment, emotional issues, and cognitive difficulties. For example, Lowe (2010) found participation in school was undermined by challenges with inefficient cognitive strategy use. The interplay of neurological and environmental factors is hard to separate and most researchers subscribe to a concept of multi-causality (Hammond, 1996). Elkins (2002) states that nationally, benchmark tests show 13% of Year 3
students experience low achievement in reading, and this figure has a tendency to rise in subsequent grades. Results of the 2012 tests in the Australian National Assessment Program - Literacy and Numeracy (NAPLAN) indicated that the number of Year 3 students at or below the national minimum standard is 13%, rising to 17% in Year 5 (ACARA, 2012). Academic outcomes are also influenced by the child’s own responses to low achievement, compounding the problem and leading to what is often described as a cycle of failure (Knight, Paterson, & Mulcahy, 1998). A loss of confidence can begin in the first two years of formal schooling (Westwood, 2004) and even at this early age children can begin to regard themselves as failures. Case study findings support the observation that difficulties with learning do not necessarily disappear over time, but may be evident at different developmental stages (Lowe, 2010). The confidence hurdle is a challenge if students are to perform well and meet everyday classroom expectations. Achievement in reading, writing, and language are of fundamental concern for students experiencing learning difficulties because difficulties in these literacy domains will impact on performance right across the curriculum. It is well-established that literacy and language skills are among the best predictors of educational success (Snowling et al., 2011).

The above issues relating to difficulties with learning raise the question of intervention methods to address academic priorities as well as students’ social-emotional functioning. Students’ perceptions of failure in the early years may well result in low perceptions of self-worth, thus concomitant interventions that promote self-belief and confidence may well be necessary. Bernard (2001) claims that what fundamentally determines how children achieve and adjust is the mindset that they bring with them to life’s experiences. Curriculum initiatives that build self-reliance and enable students to have greater control over the learning process may enhance their achievements. Carpenter and Ashdown (1996) argue that students with learning difficulties are students for whom imaginative and creative programs of study are necessary to enable them to enjoy their learning with a reasonable level of confidence.

One program that appears to offer students opportunities to build confidence and learning skills is the COI. The COI is described by Vansieleghem and Kennedy (2011) as providing an environment where students can determine what the important questions for learning and growth are and where they can seek their own
answers through the practice of thinking for themselves and with others. The COI, involves students participating in formalised, interactive-dialogue within the classroom (Lipman, 1978). A COI is usually conducted with the class seated in circle formation, addressing issues drawn from stories or curriculum-related topics. The issues evolve from open-ended questions predominantly posed by the students themselves, around matters that they see as problematic. The key elements of COI include reflective listening, thinking, questioning, and reasoning. By paying attention to the processes involved in thinking together, children begin to pay attention to the processes involved in their own thinking as described in Vygotsky’s social development theory (Cam, 1995). Participation in a COI is comprised of dialogic interaction that empowers the children to have a belief in the value of their own opinions and gives them a voice (Jenkins & Lyle, 2010). According to Lyle and Thomas-Williams (2012), COI is taught in over 50 countries world-wide. Studies of COI describe benefits which include enhancement of both academic and social-emotional components of student performance (Gardner, 1998; Hinton 2003; Millett, & Tapper, 2012). To date however, few studies have examined the influence of this teaching strategy on the development of children with learning difficulties. This study investigates the COI and its impact on the functioning of students with learning difficulties.

1.3 PURPOSE OF THE STUDY AND METHODS

The purpose of this study is to investigate the COI, as an inclusive, whole class method of assisting students experiencing learning difficulties, with the potential to provide an alternative to withdrawal approaches. The study investigates the COI’s capacity to positively influence the development of metacognitive skills and strategic thinking in children with learning difficulties. Specifically, the study examines self-regulated learning and academic self-efficacy to help students with learning difficulties acquire the skills of learning how to learn; that is, to become self-regulated learners (McInerney & McInerney, 2002). The COI may have the capacity to nurture independent thinking and more self-direction during the process of interpreting and understanding their world (Cam, 1995). O’Brien (2000) contends that the COI experience of learning is directed towards helping children to understand better, more powerfully, and with greater relevance. The questions posed in this research explore cognitive, social-emotional, and academic responses to the
COI experience. If this intervention can enhance students’ ability to think independently and develop self-direction and confidence, then students with learning difficulties may demonstrate improved performance in three areas—self-regulated learning, academic self-efficacy, and reading comprehension. These three areas were the focus of the present study.

Data were collected by multiple methods (interviews, questionnaires, tests, and observations,) pre- and post-COI in order to support the reliability and the validity of the findings. Nonetheless, it is recognised that when collecting qualitative data in a natural context such as a classroom, interpretations of data are necessarily subjective. Accordingly, claims about the impact of the COI on the participants’ academic functioning in relation to self-regulated learning, academic self-efficacy and reading comprehension must be made with caution. Other influences such as maturation, regular classroom learning, and social development across the nine-month duration of the study may also have had an impact on the participants’ development. Greater claims for a causal link between the COI and the participants’ development could have been made by designing the study to include a control group, but the selected school could not provide sufficient numbers of participating students and a control group was not possible.

A multi-method approach to data collection should support the causal relationship between the COI and student outcomes and facilitate the main objective of this study which is to investigate the impact of the COI on the needs of children with learning difficulties. Those needs include the important attributes of self-regulated learning, academic self-efficacy, and reading comprehension. Each attribute is addressed in the research questions.

The main research question is:

*What impact does participating in the community of inquiry (COI) process have on students with learning difficulties?*

The three sub-questions are:

Sub-question 1: *What impact does the COI appear to have on students’ self-regulated learning skills?*

Sub-question 2: *What impact does the COI appear to have on students’ academic self-efficacy?*
Sub-question 3: What impact does the COI appear to have on students’ reading comprehension?

1.4 SIGNIFICANCE OF THE STUDY

Children are growing up in a world that is increasingly information orientated, in which they will have to deal with disparate opinions and uncertain claims (Cam, 2001). The social challenges for young people, including peer pressure, advertising, and social media among others, are immense. The COI provides an opportunity for students to develop their conceptual understanding, reasoning, and problem-solving abilities. The COI creates an environment where children can explore new ideas and articulate concepts they have not thought about or stated aloud before (Vansieleghem & Kennedy, 2011). This study, focusing on the impact of the COI on learning difficulties, is significant for three reasons.

First, the COI may provide cognitive, social-emotional and academic benefits for students experiencing difficulties in Australian schools (Hinton, 2003). Second, the COI is an effective teaching and learning strategy adopted by many Australian schools (FAPCA, 2002), and a study on its relevance and impact on students with learning difficulties could help guide future school decisions regarding the scope of its implementation. If it proves to be beneficial in addressing learning difficulties, it would form an inclusive approach rather than an individual or segregated group, approach. Third, the complex nature of the learning difficulty issue is a continuing concern and requires that appropriate support initiatives are in place early in a child’s schooling (Snowling et al., 2011). Hence, there is a need for ongoing research on possible intervention strategies.

1.5 THESIS OUTLINE

The thesis introduction has outlined why the COI, as an intervention for students with learning difficulties, may have the capacity to enhance academic self-efficacy, self-regulated learning, and reading comprehension. Chapter 2 discusses literature relating to learning difficulties and the COI to identify links between these two domains. The identification and characteristics of learning difficulties are considered, as well as priorities for learning support. A social-cognitive perspective on support for students with learning difficulties is presented, along with a review of previous studies. Reading comprehension is a key area of academic achievement and is
discussed in terms of its importance and the need for intervention. The COI is reviewed for its perceived potential for having a positive impact on self-regulated learning, academic self-efficacy, and reading comprehension.

Chapter 3 explains the conceptual framework for the study, expands on the various issues and stakeholders in the project, and outlines the design. It also provides information that supports the relevance of this particular area of research and addresses the key questions relating to the research problem. The research framework sets out the essential elements of the study in the wider theoretical, social, and practical domains to develop its significance (Marshall & Rossman, 1999). Chapter 3 also describes the case study design (Yin, 1994). This design will allow for extensive data collection to gain in-depth understanding and meaning of the impact of the COI on self-regulated learning, academic self-efficacy, and reading comprehension. Methods used for addressing the research questions are specified in terms of the data collection and analysis methods.

Chapter 4 describes the procedures for implementing the COI in a classroom. It describes the rationale for the selection of topics, the role of the researcher in facilitating the program, and the role of the classroom teacher. The format for each lesson is also described. The practical aspects of presenting the lessons are considered, and the procedures for monitoring students’ progress are explained. The next four chapters present results for each of the three sub-questions. Chapter 5 focuses on the first question regarding self-regulated learning. Chapter 6 presents results for academic self-efficacy. Chapter 7 presents the results for reading comprehension, providing information on changes in reading levels from the three measures used. Chapter 8 responds to the main research question with a case report on one of the participating students, providing an illustrative example of how one student was influenced by the COI approach. Chapter 9 presents the discussion and interpretation of the results of the study with reference to the literature. Chapter 10 provides conclusions that can be drawn from the study in response to the main research question, “What impact does participating in the community of inquiry process have on students with learning difficulties?” This last chapter also discusses limitations of the study, suggestions for future research, and implications for teaching practice.
Glossary

This glossary presents common terms used throughout the document and where relevant their abbreviations.

- **Academic self-efficacy** is self-efficacy specific to academic achievement, and has predictive capability for learning outcomes (Bong, Cho, Ahn, & Kim, 2012).

- **Community of inquiry** (COI) (Lipman, 1978), is a classroom inquiry orientated strategy for improving thinking and reasoning in children.

- **Interactive dialogue** is a verbal exchange involving complex cognitive activity between students and teacher or students with each other (Baker & Gerston, 2002).

- **Locus of control** (LOC) occurs when students perceive events as being contingent upon their own behaviour—internal LOC, or external LOC if students perceive outcomes being contingent upon external factors over which they have little control (Knight, Paterson, & Mulcahy, 1998).

- **Metacognition** involves reflecting on one’s own thinking, strategy selection, monitoring, and revision (Borkowski & Thorpe, 1994).

- **Self-direction** encompasses control, motivation, self-efficacy and personal goal-setting (Bandura, 1997).

- **Self-efficacy belief** is the belief in one’s capabilities to set goals in specific tasks then execute the courses of action required to achieve them (Bandura, 1997).

- **Self-regulation** refers to self-generated thinking, feelings and actions that are planned and cyclically adapted toward the attainment of personal goals (Zimmerman, 2000).

- **Self-regulated learning** (SRL) is demonstrated when self-generated thinking, self-control and actions are applied in the learning environment.

- **Social-cognitive theory** integrates the cognitive, metacognitive and motivational mechanisms of self-regulation (Bandura, 1989, 1997). It is also
concerned with how individuals develop beliefs about their ability (self-efficacy), and how they manage their learning (self-regulation) through observation, imitation and reinforcement in social settings.

- **Social-constructivist learning theory** views children as active and critical participants in their own learning experiences by means of a collaborative and exploratory approach to learning in which they are supported by more proficient others (Vygotsky, 1978; Westwood, 2004).

- **Students with learning difficulties** are those making inadequate progress and who experience significant difficulties (Louden, Chan, Elkins, Greaves, House, Milton, Nichols, Rivalland, Rohl, & van Kraayenoord, 2000) with learning in literacy and numeracy.

- **Support teacher for children with learning difficulties**. Learning support teachers provide lesson planning, programs, and advice in relation to those students experiencing learning difficulties.

## 1.6 SUMMARY

This chapter provided an overview of the study. The background explained the researcher’s professional interest in school children who experience learning difficulties and discussed social-cognitive interventions for these students. Reference was made to an intervention, the COI, based on social interaction that has the potential to support children with learning difficulties in developing aptitudes for self-regulated learning, higher levels of academic self-efficacy, and stronger reading comprehension skills. In the next chapter, the key elements of the study described in this introduction will be examined in relation to the relevant literature.
Chapter 2: Literature Review

This chapter reviews the literature relating to students with learning difficulties and the priorities for learning support. It takes a social-cognitive perspective on supporting these students by investigating outcomes associated with the metacognitive nature of self-regulated learning (SRL) and academic self-efficacy (ASE). The chapter then reviews the impact of engaging with a dialogic participatory intervention for students with learning difficulties, the community of inquiry (COI) (Lipman, 1978).

Chapter 2 has five parts. Section 2.1 investigates the nature of learning difficulties and the challenges typically faced by these students, particularly with reading comprehension. Section 2.2 examines a social-cognitive perspective on learning difficulties, focusing on self-regulated learning and academic self-efficacy. Section 2.3 discusses intervention methods, specifically the COI, and Section 2.4 presents conclusions pertaining to the previous sections. A chapter summary of the key issues and implications for the design of the study are provided in Section 2.5.

2.1 STUDENTS WITH LEARNING DIFFICULTIES

This section provides an overview of definitions and identification of students with learning difficulties (Section 2.1.1), then discusses characteristics and assessment (Section 2.1.2), and expands on the priorities for learning support (Section 2.1.3). It also investigates the literature on a key academic priority, reading comprehension (Section 2.1.4).

2.1.1 Learning difficulties: definitions and identification

Students with learning difficulties form the largest group of students with additional learning support needs enrolled in Australian schools (Westwood, 2008). Given the extent of this large group, it is essential to find approaches to teaching and learning that will assist them to become successful learners. Generally, students experiencing difficulties with learning fall into two groups: those whose difficulties are more severe and likely to need long term support and those whose difficulties are
considered to be less severe (Rohl & Rivalland, 2002) but still cause inadequate progress within the curriculum core skills. A distinction between students with learning difficulties and those with learning disabilities is recognised in some Australian states (Elkins, 2002). This study focuses specifically on students with learning difficulties.

An examination of policy documents from the various ministries of education within Australia indicates that a range of different procedures are used for identifying and supporting students with learning difficulties (Rivalland, 2000). Currently, the Australian National Assessment Program - Literacy and Numeracy (NAPLAN, 2012) provides parents/carers, schools and school systems the information needed to compare student’s achievements in Years 3, 5, 7 and 9 against national and state standards (ACARA, 2011). However, in order to develop an individual learning profile and plan interventions for students with learning difficulties, more fine-grained and current information is required. The process of profiling individual students with learning difficulties is complex, and involves issues of impartiality and accuracy if they are to be properly identified and then receive appropriate assistance (Johnson, Mellard, & Byrd, 2005). Timeliness for providing additional support is important. According to Elkins (2002), most Australian schools have some systematic method of early identification. However, it is not always possible to predict, at the Year 1 level, which students will continue to experience difficulties and how those difficulties originate? For example, if learning is related to skill acquisition, learning difficulties will be defined in terms of skill deficits and we can expect that learning difficulties will be linked to cognition (Dudley-Marling, 2004). Following identification, children with learning difficulties should have their needs addressed and an appropriate support program put in place as soon as practicable (Snowling et al., 2011). However, there is no general consensus on the time and stage of schooling that this should occur.

2.1.2 Learning difficulties: characteristics and assessment

Since the 1960s, there has been a growing awareness of the complexity of underlying issues associated with learning difficulties (Robinson, 2002). Many students with learning difficulties lack confidence and social-emotional skills (Elksnin & Elksnin, 2004), and have diminished beliefs about personal control and metacognitive processes (Borkowski & Thorpe, 1994). Metacognition involves active control over
cognition enabling greater understanding and analysis of one’s thinking processes particularly in learning. Findings from other studies suggest that variables linked to learning difficulties make establishing causes challenging (Wang et al., 1993), but they usually include the physical learning environment and social-emotional factors. Understanding this complexity is a necessary prerequisite for appropriate assessment and the development of effective support programs for individual areas of need. Westwood (2008) suggests that difficulty with literacy most commonly brings these students to the attention of teachers and parents, while Snowling et al. (2011) state that children who enter school with poorly developed speech and language, are at risk of literacy difficulties. Other factors may include issues related to the curriculum, the classroom environment, socio-economic disadvantage, low self-confidence, and social-emotional well-being (Westwood, 2004). Chan and Dally (2001) suggest that students with learning difficulties demonstrate a passive learning style and have few self-directed learning strategies. Snowling et al. (2011) also perceive a range of associated issues: for example, while some children have problems with language acquisition, others may be poorly prepared for school because of adverse family or socio-economic circumstances. Any one or combination of these factors may affect a child’s capacity for learning.

For some children, the learning environment itself can be fraught with challenges that impede their efforts to achieve. They are often frustrated by the scope and pace of curriculum demands and progress is often further impeded by different rates of learning, particularly in classes with high student numbers (Dudley-Marling, 2004). Learning difficulties are often exacerbated by students not having the necessary prior level of knowledge or skill needed for the task at hand (Westwood, 2004). When children are given work in the classroom that is substantially beyond their current capabilities, the demands extend beyond their “zone of proximal development” (Vygotsky, 1978). Daly et al. (1997) confirm that poorly-matched instructional materials lead to poor fluency, diminished motivation and impending failure. Some limited experience of failure is not necessarily a bad thing, but failing consistently creates a danger of sliding into a failure cycle. For example, poor reading leading to poor school performance and a downward cycle of demotivation and diminished effort (Robinson, 2002). The result, Robinson claims, is a lack of confidence or anxiety resulting in decreasing motivation or concentration, fewer
positive teacher responses, lower work expectation, poor general academic performance, and consequent learning difficulties.

Students with learning difficulties may also attribute their problems to external factors and transfer responsibility for their learning to others. The development of an external locus of control (LOC) can lead to learned helplessness and a failure cycle (Knight, Paterson, & Mulcahy, 1998): “When students do not perceive events as contingent upon their own behaviour (external LOC) a psychological handicap is generated that thwarts actions from the students themselves and others such as parents and teachers” (p. 7). This handicap may require attribution remediation to regain a more internal LOC as a prerequisite for academic achievement (Westwood, 2004).

Social factors relating to the learning environment cannot be overlooked. Dudley-Marling (2004) argues that difficulties with learning occur during the interaction of people, places, and activities. Learning difficulties are produced in, and as part of, the social context. Wang et al. (1993) similarly state that, along with cognitive and metacognitive processes, schooling is social by nature, and social and behavioural attributes are fundamental to achievement. Children who engage in constructive social behaviours are more likely to perform well. Knight and Scott (2004) agree that environmental and social-emotional factors are recognised as part of the problem. However, Robinson (2002) points out that, because of the interaction between potential underlying causal factors and environmental influences, understanding the complexity of learning difficulties is not a straightforward process. Rohl and Rivalland (2002) contend that the resources children bring to school influence their learning in many different ways; for example, reading development may be affected by delayed speech and extrinsic factors such as the quality of experiences in the home (la Paro & Pianta, 2000).

Emotional influences can have an extensive impact on learning (Ashdown & Bernard, 2012). These include self-perceptions, confidence and motivation, all of which are somewhat difficult to observe during the process of assessment and identification. Difficulties in these areas are often further exacerbated by emotional reactions to a lack of success (Westwood, 2008). The importance of considering emotional learning issues in the social context is underscored by Elksnin and Elksnin (2004), who claim that social-emotional skills are essential for school and life
success. Evidence abounds that children who demonstrate adequate social-emotional skills are more likely to be successful academically, better adjusted, and enjoy higher levels of self-esteem and self-confidence than students with poor social-emotional skills. Elksnin and Elksnin (2004) claim that, despite the plethora of academic interventions, there are few strategies for addressing students’ social and emotional difficulties. Although most current intervention programs for low-achieving students primarily target their particular academic difficulties, the emotional needs of students with learning difficulties should not be underestimated in the intervention process. Clay (1991) contends that this especially applies in early childhood where the foundations of emotional security, confidence, and self-esteem are set in place. A child starting school often does so with mixed feelings and some misgivings. Security, self-confidence, acceptance, and a sense of belonging are the foundations for attitudes that encourage participation in effective learning experiences (Clay, 1991).

Both learning development and emotional development are a cooperative responsibility encompassing home and school. If children are encountering hurdles and barriers in the very early stages of schooling, it is important that both teachers and parents understand and are aware of their impact on learning. Pollard (1992) argues that both parents and teachers bear responsibility for children’s learning, because all children develop their perceptions about learning in circumstances that adults control. Effective school and home partnerships that embrace cooperation and negotiation will help to ensure that a child’s learning does not suffer. Although the causes of learning difficulties are unclear, support initiatives may be facilitated by collaborative approaches. The diverse nature of learning difficulties can involve various origins and frequently they interact (Dudley-Marling, 2004). Whatever its origin, low academic attainment is a concern for parents and for teachers (Snowling et al., 2011). Hence, despite the complexities in designing support initiatives for these students, a continuing exploration of the phenomenon of learning difficulties is imperative to ensure that children with learning difficulties move ahead academically. Jones and Charlton (1996) propose that the way forward is to pursue a broad range of strategies that address the specific needs of the child as well as factors associated with the child’s learning environment when designing support programs.
2.1.3 Priorities for learning support

Critical to the long-term learning needs of students with learning difficulties are support initiatives that address factors in the learning environment, as well as social-emotional factors (Knight & Scott, 2004). Such initiatives are needed to assist in restoring students’ confidence and perceptions of success. Building confidence and motivation in children with learning difficulties is clearly a priority (Ashdown & Bernard, 2012). If students are underperforming in the classroom because of difficulties in coping with classroom demands, then support initiatives need to provide the students with tools and strategies that will help them to learn and complete tasks in a more independent manner. Children with learning difficulties need to develop a greater capacity for managing their own learning (McInerney & McInerney, 2002). They need access to support mechanisms that provide increased self-direction and personal control. These aptitudes may well be achieved by nurturing better thinking and metacognitive strategies that encourage independence in the cognitive processes. Appropriately developed cognitive strategies can enhance self-regulatory approaches to learning (Bosson et al., 2010).

In addressing reading failure, Bruce and Robinson (2004) for instance suggest that there are positive implications for supporting reading through metacognitive methods that encourage self-monitoring of learning strategies. Their study involved 74 Year 5 and Year 6 students experiencing reading difficulty. Using reciprocal teaching of comprehension strategies in a social context, they found the metacognitive forms of instruction increased reading comprehension. Brown and Pressley (1994) also argue that good readers monitored their own use of strategies. From their “think-aloud” research method investigating self-regulated reading in Year 2 students, they found that for children to develop reading comprehension strategies, it is necessary to build metacognitive skills and motivational beliefs.

Another case study addressing thinking strategies (Hurley, 2003), focused on a Year 6 classroom involving 12 students, six in the trial group and six in the control group, in a Queensland school. Across the one year period of the intervention, Hurley found that all students, having been immersed in a culture of thinking skills and strategies that promoted learning how to learn, displayed growth in their abilities in using thinking strategies. Her findings indicated that both average students and students with learning difficulties grasped the different strategies quickly and well,
even though it was thought that their limited experience could make the concepts too difficult to understand. The overall findings of the study indicated that enhanced metacognition resulted in increased confidence, motivation, and improved thinking strategies.

Inquiry-based learning, as experienced in a COI, is also metacognitive and develops higher-level thinking skills (Cam, 2001). In a COI study conducted with Year 4 students (Parsons, 2009), findings revealed that the children exhibited meaningful, vibrant interactions through which they constructed shared understandings. They developed thinking strategies as well as strategies for communicating, thus enhancing their ability to reason and conceptualise, while expanding their powers of comprehension. Many students with learning difficulties demonstrate limited use of thinking strategies (Knight & Scott, 2004). Interventions that focus on improving metacognition may well support a student’s monitoring of thinking processes and promote increased independence in learning.

The connection between metacognition and self-regulation is found in the results of other studies. Intervention measures encompassing metacognitive instruction support the development of self-regulated learning skills thus building confidence and motivation (Bosson et al., 2010). Other findings similarly indicate that the difficulties experienced by many students are associated with their non-self-regulated or passive learning style (Chan & Dally, 2001). Chan and Dally point out that the main element of metacognitive theory is strategy selection and strategy use, as children develop self-regulatory behaviours. Bosson et al. (2010) found children with learning difficulties show limited and inefficient strategy use in most subject areas, including reading. Efficient strategy use produces a higher level of self-regulatory control and confidence. Knight, Paterson, and Mulcahy (1998) contend that effective learners, who tend to have a more internal locus of control, are confident self-directed learners and are reflective in their approach to solving problems. For example, an effective instructional program for readers experiencing difficulty may need to include metacognitive strategies for nurturing a self-regulated approach in reading comprehension (Bruce & Robinson, 2004). Metacognition requires moving from a mechanical view of learning to one that involves construction of meaning, insight, reflection, and greater self-direction in the way students learn (Ames, 1998). Although much current pedagogy in the early years is
based on teaching the sub-skill processes of reading, writing, spelling, and numeracy (Bissaker, 1999), supporting cognitive strategy use and creating confident motivated learners is essential.

To conclude, a range of studies provide evidence that children with learning difficulties need not only basic skills instruction but also instruction that will support their development of metacognitive skills. Each of the studies discussed previously were implemented in a social context and showed evidence of improved thinking. Vygotsky (1978) states that social interaction plays an important role in development of cognition because language is critical in developing conceptual thinking and metacognition. Social learning pedagogies such as COI, also provide support for positive self-perceptions and self-efficacy. Central to this study is the social learning theory of Bandura. Bandura (1989) theorised that individuals develop beliefs about their ability and perceptions of how to manage their learning through observation, imitation, and reinforcement in social settings. They develop attributes that Bandura states constitute the belief in one’s capabilities to set goals and perform sufficiently well to achieve them. One of those goals, and a key goal for students with learning difficulties, is competence in reading comprehension.

2.1.4 Reading comprehension

The ability to comprehend what has been read is a basic requirement for achieving at school. Many children, especially boys, experience difficulties with reading (Wheldall & Limbrick, 2010). The reasons some children struggle with reading are varied. From trouble in decoding words to problems retaining information, reading difficulties are complex (Duke & Pressley, 2005). Duke and Pressley state that a typical class often includes children reading a year or more below grade level despite the comprehensive range of skills taught from the early years of schooling. The contribution that parents make by reading with their children at home, is also highly relevant for reading support (Pollard, 1992). Successful reading comprehension is not only essential for students across all learning areas, but also essential for full engagement in social and cultural activities, and in later employment (Florit & Cain, 2011). Accordingly, it is critical to provide evidence-based instruction and support to young, struggling readers. There are three key considerations.
First, cognitive skills need to be addressed. Children with reading difficulties need cognitive strategies and self-regulatory aptitudes to assist monitoring and prediction during reading. For example, an effective instructional program for readers experiencing difficulty may need to include metacognitive strategies for developing reading comprehension skills (Bruce & Robinson, 2004). Building metacognitive skills enhances students’ understanding of texts generally (Brown & Pressley, 1994) and good readers are those who monitor their use of strategies. Wright (1999) also argues that building metacognitive skills can enhance students’ understanding of reading texts, while other studies have found that metacognitive strategies and self-regulation lead to improved powers of comprehension (Bruce & Robinson, 2004; Garner, 1992). Howse et al. (2003) suggest that self-regulatory skills appear to be related to reading achievement, but generating motivation should also be included in learning support programs.

Second, the emotional needs of children with reading difficulties need to be considered. Westwood (2011) states that children with learning difficulties commonly develop negative beliefs in their own capabilities. McKenna and Kear (1990) claim that an emphasis on reading proficiency often ignores the important role played by children’s attitude in the process of becoming literate. They claim that motivational and emotional responses do affect reading outcomes. In a recent study designed to implement instructional programs to promote social-emotional learning skills, Ashdown and Bernard (2012) found that the low achievers improved their reading subsequent to motivational tuition. Through developing positive attitudes towards reading and a belief that they can read, they gained confidence as readers with growing reading self-efficacy. Hence the conclusion that, in addition to the teaching of basic reading skill requirements, interventions should encompass emotional factors including the motivational and confidence issues that impact on reading difficulty. These factors should not be ignored, for, as Bandura (1997) states, skills can be easily over-ruled by self-doubt.

Third, language development is essential for reading comprehension development (Catts & Hogan, 2003), and language acquisition is stimulated by social learning opportunities involving conversation, interaction and dialogue. Language development begins long before children come to school and is essential for conceptual development. Vygotsky (1978) states that language is critical, as it
provides a means of conceptual thinking. Millett and Tapper (2012) agree that children’s dialogue facilitates the movement between the concrete and the conceptual. Oral language development is therefore essential for helping children comprehend what they read. This notion is consistent with studies by Catts and Hogan (2003), who found that children who reached the highest levels of language for their age in Year 4 had the best outcomes in reading achievement, thus indicating the close tie between reading achievement and children’s oral language development. The data collection methods for this study will use formal instruments to measure changes in reading comprehension over the study time-frame (see Section 3.2.4).

2.2 SOCIAL COGNITIVE PERSPECTIVE

This section discusses a social-cognitive perspective on learning difficulties by evaluating the impact of language and dialogue on self-regulated learning and academic self-efficacy. The significance of self-regulated learning is examined in Section 2.2.1 and academic self-efficacy in Section 2.2.2. The section concludes by reviewing the social-cognitive implications of both self-regulated learning and academic self-efficacy in Section 2.2.3.

2.2.1 The significance of self-regulated learning

The provision of appropriate cognitive strategies for children with learning difficulties builds their capacity for learning how to learn, that is, they are becoming self-regulated learners (McInerney & McInerney, 2002). Self-regulated learning is the capacity to monitor, evaluate, and reflect on learning progress, and requires a level of metacognition, that is, reflective evaluation of one’s thought processes. Metacognition is responsible for self-regulatory attributes (Chan & Dally, 2001) and is reported to have a considerable impact on academic achievement or failure. As children mature, they acquire self-regulatory skills at different rates (Borkowski, 1992). Although the concept is complex, common to most definitions are the core elements of planning, control, monitoring, and reflection that children engage in during the learning processes (Gilmore & Cuskelly, 2005). Hwang and Gorrell (2001) found that children as young as four are aware of self-regulated behaviours to solve problems; therefore even students in their early years have the potential for acquiring strategic thinking.
The findings of an empirical study focusing on the role of metacognition (Sperling, Howard, Stayley, & Dubois, 2004) demonstrated positive and relevant correlations between metacognition and strategy use. Sperling et al. found that the development of metacognitive awareness may precede effective strategy use. Chan and Dally (2001) similarly argue that metacognition is responsible for the implementation of strategies and self-regulatory attributes. Students who are successful learners tend to have metacognitive understandings that allow them to assess which strategies will be effective for a given learning situation; however, students with learning difficulties typically lack this self-awareness (Vaidya, 1999) and need support programs in the use of strategies to provide them with self-regulatory aptitudes such as planning and reflection.

This study focuses on the model of self-regulated learning developed by Pintrich (2000), as it aligns with the processes that most other models of SRL share. The model will form the structure for collecting data in relation to SRL as described in Section 3.2.2. Pintrich’s model encompasses four phases including forethought (planning), control, monitoring, and reflection. Studies by Howard, McGee, Shia, and Hong (2000), focusing on SRL and metacognitive awareness, and Dowson and McInerney (2004), investigating cognitive and metacognitive strategies, demonstrated effective methods for investigating and measuring cognitive strategies in children with learning difficulties. Adaptions of their questionnaires are described later (Section 3.2.2). Both studies have a direct relevance to the four phases of SRL posited by Pintrich (2000).

2.2.2 The significance of academic self-efficacy

The second sub-question guiding this study examined the effect of the COI on academic self-efficacy by investigating students’ perceptions of their capabilities for achieving success in learning. Bandura (1977) defined self-efficacy as the belief in one’s capabilities to set goals in specific tasks and then execute the courses of action required to achieve them. In this study, the specific area of belief focuses on self-efficacy in the learning domain; that is, academic self-efficacy (Bong, Cho, Ahn, & Kim, 2012). Bong et al. contend that domain specific, academic self-efficacy beliefs have considerable predictive capability for achievement outcomes in learning. This capability is of particular relevance in the context of interventions for students with learning difficulties. Self-esteem is referred to in this study but is not measured. The
term self-esteem can be described as a form of perception involving more global judgements of a student’s sense of self-worth (Cleary, 2009). Self-esteem was not evaluated because it is less context specific and more relevant to an individual’s general well-being.

Borkowski (1992) states that there are linkages between self-regulation and efficacy beliefs. As strategic processes become more refined, the young student comes to recognise the importance of thinking strategies, and as a result feelings of self-efficacy emerge. Through their own self-directed actions, thinking competencies develop further, and they begin to enjoy learning for its own sake. This response is the case for most students, however students with learning difficulties may not have the cognitive strategies or the understanding of thinking procedures (Kroll, 1999) at a level that gives them confidence, enjoyment of learning and efficacy belief. If self-efficacy involves a student’s belief that a goal can be achieved, and determines the degree of effort to be expended (Bandura, 1995), then learning support programs should include a focus on developing students’ self-efficacy. Self-efficacy beliefs contribute to academic success and enhanced self-efficacy generalises to other learning situations (Jinks & Morgan, 1999). As a result of their low self-perceptions, children with learning difficulties are vulnerable to diminished persistence and purpose, often believing that the factors that make them successful students are outside of their control (Zimmerman, 1995).

Self-efficacy may also contribute reciprocally to self-regulation. Wang, Haertal, and Walberg (1993) conducted a meta-analysis of 61 studies using a conceptual framework of 28 categories of influence on learning. Wang et al. (1993) found that the motivational attributes that determine effort and perseverance are complementary to metacognitive processes and can be regarded as key attributes necessary for developing self-regulated learning. While self-regulation refers to a sense of personal control over one’s own learning, self-efficacy refers to a sense of confidence in one’s capacity to achieve personal goals. According to Pajares (2002), self-efficacy beliefs typically help to determine the outcomes one expects, creating, as Bandura (1995) points out, a powerful impact on an individual’s orientation towards learning.

Bandura (1995) argued that, among the sources of personal agency, none is more important than beliefs of personal efficacy in specific circumstances. Efficacy
beliefs influence how people think, feel, motivate themselves and act. Bandura’s (1977) self-efficacy theory states that psychological influences, whatever their form, alter the level and strength of self-efficacy and are derived from four principal sources. First, accomplishments build a strong belief in one’s ability to achieve, while failures undermine it. Second, vicarious experience allows self-appraisal of personal performance in relation to the attainments of others. Third, feedback from peers and adults is important because it is easier to sustain efficacy if others express faith in one’s abilities rather than doubt. Finally, self-efficacy is influenced by a student’s physiological state of confidence, comfort and enjoyment within the learning environment.

The academic self-efficacy of students with learning difficulties can be at risk in all of the four influences on self-efficacy, success, observation, feedback, and physiological state, posited by Bandura (1997). This is because the successes of students with learning difficulties are often infrequent and their comparisons with others can be negative. Students with learning difficulties often receive less positive feedback, and their emotional stability and confidence may also be at risk, creating potential barriers in their pursuit of academic competence. Zimmerman (1995) emphasises the relationship between self-efficacy and academic achievement: “It is their growing sense of self-efficacy and purpose that serve as major personal influences in their ultimate level of accomplishment” (p. 202). Zimmerman states that efficacy beliefs play a prominent role in regulating cognitive, affective, and motivational factors that operate in concert in the development of children’s capabilities to manage their own learning. Westwood (2004) adds that one of the common observations concerning students with learning problems is that they have little confidence in their own ability to control learning. Similarly, Borkowski and Thorpe (1994) believe that the longer term outcomes associated with underachievement might be lessened by an early focus on three essential metacognitive components: strategic thinking; beliefs about personal control; and hoped-for future goals. Therefore, early intervention, encompassing thinking skills and establishing positive academic self-efficacy beliefs to foster motivation, effort and persistence, could well benefit children with learning difficulties.

The implications for academic self-efficacy, as discussed above, are significant in this research. In order to gauge the impact of a social-cognitive intervention on
student ASE, the methodology for this study will examine changes in beliefs about success, self-perceptions, motivation, and confidence in early primary age children with learning difficulties. Data collection for ASE will be described in the methodology presented in Chapter 3.

2.2.3 A social-cognitive perspective on self-regulated learning and academic self-efficacy

Intervention models that incorporate social-cognitive teaching methods support both the social-emotional needs of children with learning difficulties, as well providing experiences involving information processing (Bauminger et al., 2005). Additionally, social learning contexts using peer interaction are essential for developing thinking and learning strategies (Naylor & Cowie, 2000). Strategy development is significant for children with learning difficulties as many have limited self-directed learning strategies (Chan & Dally, 2001). At the same time, social interaction supports social-emotional needs within the child. Smith (2002) points out the importance of interventions that impact on emotional issues and self-efficacy and contends that such interventions have the capacity to change children’s beliefs about their own capabilities. As a result, it can be expected that social-cognitive approaches may well be a source of both emotional and cognitive benefit. As Joet, Usher, and Bressoux (2011) have found, the sources underlying academic self-efficacy also underlie self-efficacy for self-regulation. They argue that this relationship is not surprising, given the similarities in these two types of self-efficacy beliefs.

Social-cognitive teaching strategies appear to support metacognition development. Approaches such as inquiry-based interactive dialogue are substantially metacognitive (Cam, 2006) impacting positively on reasoning and judgement. Wang et al. (1993) found metacognitive processes to be second only to classroom management among the areas of influence on school performance while metacognitive processes had the most powerful effect on learning. These claims are significant in supporting children with learning difficulties who often have few metacognitive skills. Chan and Dally (2001) report that most children with learning difficulties were found to show limited understanding of learning strategies such as evaluating goal-setting and planning. Similarly, Lowe (2010) found that, for children requiring support, the capacity to plan activities purposefully was the cognitive area that teachers and parents reported to be most problematic for students.
Social-cognitive learning involving interactive dialogue appears to impact positively on reflective thinking, reasoning and self-directed learning (Hinton, 2003; Sharp, 2004). Accordingly, a focus on social-cognitive learning in conjunction with interactive dialogue may well offer benefits for children with learning difficulties. To illustrate, Baker and Gersten (2002) found that in studies using elaborated dialogues, the students developed higher levels of reasoned thinking as a result of controlled verbal interactions. The process of thinking aloud appears to lead to the internalisation of the procedures and strategic thinking. Perry (1998) found learning improvements in social-cognitive development when peer interaction was encouraged. Similarly, Ellis (1998) also found results supporting the utilisation of social-learning environments for students with learning difficulties. Ellis (1998) asserted that to build on motivation, internal locus of control, social self-perception and a sense of competence, more emphasis should be placed on social responsibility and collaboration skills among students.

Of the many factors contributing to learning, social and behavioural attributes constitute an important category, given the social nature of schooling (Wang et al., 1993). What children say about their work to others and to themselves helps us to understand the nature of their metacognitive and self-regulatory activities (Biemiller & Meichenbaum, 1992). Biemiller and Meichenbaum affirm that effective learners spontaneously practise verbal monitoring of strategy use, while the less effective learners are not as likely to carry on a dialogue with themselves or others, hence the significance of social-cognitive interventions. Baker and Gerston (2002) argue that interactive dialogue is critical for taking students with learning difficulties from simple to more complex states of learning. Such dialogue builds on students’ current level of understanding and their ability to articulate their ideas and develop relationships between them. For example Lyle and Thomas-Williams (2012) argue that the philosophy for children teaching process develops the ability to ask questions, listen carefully to others and solve problems collaboratively. Similarly, Naylor and Cowie (2000) claim that group-learning environments that are properly constructed to encourage questioning, evaluating, and constructive criticism can lead to a restructuring of knowledge and understanding.

Children, as well as adults, place great importance on being with and observing others, in addition to being appreciated, listened to, and accepted by their peers.
Knight, Graham, & Hughes, 2004: “Not only do children need to be taught about social competence but they also need opportunities for working with others to foster acceptance” (p. 181). Social cognitive approaches encourage verbal confidence and the ability to articulate, reason, and understand, thus enhancing procedural competence and self-correcting thinking. Splitter and Sharp (1995) claim the aptitudes of self-evaluation and self-correction are an outcome from participation in interactive classroom-inquiry programs. Through engagement in dialogue, children who have learning difficulties are enabled to perceive themselves as being capable within their peer group and they become empowered to take charge of their own learning and thus move forward intellectually. McLeod (2010) claims that it also strengthens the schema students draw from when they encounter new texts, experiences and concepts. Brooks and Brooks (1993) support this argument: “Students who frame questions and issues and then go about answering and analysing them, take responsibility for their own learning and become problem solvers and perhaps more importantly problem finders” (p. 103). Claxton (2002) supports the viewpoint that reflective, self-monitoring procedures develop critical thinking:

Given the chance and the right kind of encouragement, even children as young as five or six years of age can be reflective about their own thinking. Good learners have the self-awareness to monitor their learning and change course when circumstances change. They can reflect on what they have produced in a realistic and sometimes critical way. (p. 32)

The social element of childhood development is fundamental to cognitive development and self-regulatory behaviours, while goal-setting develops as a key attribute in self-regulated learners (Wang et al., 1993). Social-cognitive teaching strategies may also influence self-efficacy by elevating confidence and improving self-esteem. Student discourse within the classroom plays a focal role in shaping a student’s sense of self-worth (Nevins & Manning, 2002). A vital link in the metacognitive process is between student motivation and problem-solving behaviours. Borkowski (1992) argues that a sense of self-efficacy, and the enjoyment of learning that flows from individual strategic activities, invigorate self-monitoring and strategy selection. It seems appropriate for teachers to develop working models.
of metacognitive development in order to deliver creative, flexible, strategy-orientated curricula.

Social-cognitive models offer environments that support the role that self-efficacy beliefs play in both self-directed learning and academic achievement (Zimmerman, 1995): “Perceived efficacy for self-regulated learning enhances perceived efficacy for academic attainment, and perceived academic self-efficacy in turn raises the academic goals students set for themselves” (p. 221). This view is supported by Schunk (1996), who states that self-efficacy influences self-regulatory efforts during learning and has a reciprocal relationship to self-regulated learning outcomes. Given these perspectives, there appears to be a need for a program based on social-cognitive pedagogy, to build self-regulation skills and self-efficacy beliefs so that children with learning difficulties can take greater control over their learning.

2.3 INTERVENTIONS

This section of Chapter 2 draws on the concepts in Sections 2.1 and 2.2 relating to self-regulated learning and academic self-efficacy, and discusses specific social-cognitive methods of support to provide these competencies to children with learning difficulties. Finding an appropriate intervention model is investigated in Section 2.3.1, and the selected intervention, the COI, is described in Section 2.3.2. The implications of this mode of intervention for children with learning difficulties are examined in Section 2.3.3.

2.3.1 Finding an appropriate social-cognitive intervention model

This research focuses on children with learning difficulties and the extent to which a social-cognitive approach can support the development of self-regulatory attributes and enhanced academic self-efficacy. Central to developing an effective intervention strategy for students with learning difficulties is the importance of metacognition and the part played by the peer group. Through social interaction and verbal exchange, peers have a crucial role to play in developing sound thinking strategies and enhancing metacognitive attributes (Naylor & Cowie, 2000). It is not just the encounter that brings about change but the internalisation of this joint intellectual activity. Bauminger et al. (2005) examined the social-emotional understandings in children with learning difficulties and concluded that intervention models should incorporate support using social-cognition processes. The children’s social-emotional
concepts developed through verbal and non-verbal group interaction, and role-taking activities in social contexts. It is a methodology that shows step by step how one can achieve knowledge and understanding concerning one’s own thinking (Vansieleghem & Kennedy, 2011). Social processes encompassing social interaction and collaborative inquiry have relevance to Vygotsky’s (1978) theory on social learning. A central theme in Vygotsky’s social development theory, according to McInerney and McInerney (2002), is that cognitive development is the transformation of basic biologically determined processes into higher cognitive functions through cultural inventions, social structures and language. Kroll (1999) argues that, for Vygotsky, intellectual development was seen as a social process and knowledge was socially constructed. His theory has two key features of relevance to learning for children with learning difficulties. First, Vygotsky (1978) contends that social interaction plays an important role in the development of cognition:

Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals. (p. 57)

Second, Vygotsky proposes that an individual’s potential for cognitive development depends on the zone of proximal development. The zone spans the potential area of learning development from a child’s current skill level to a higher level where assistance is then required.

An intervention potentially applicable to this area of development is the COI. The COI teaches students not only to think together but also to think for themselves, a natural extension of Vygotskian psychology (Cam, 2006). It is a metacognitive process through which, Cam claims, children begin to gain a greater control over their own thinking and become more self-directed in their behavior. However, Bauminger et al. (2005) point out that intervention models should also be developmentally orientated toward the social-emotional abilities needed during peer interaction and information processing. COI encourages positive behaviours and enhances motivation (Hinton, 2003), as the children build ideas together by sharing ideas (McLeod, 2010). The social-cognitive characteristics of the COI build on the
cognitive aspects of performance, developing a sense of intellectual confidence (Golding, 2002). Additionally, COI constitutes an appropriate framework for teaching and learning across all subject areas and disciplines (Imbrosciano, 1997; Splitter & Sharp, 1995) by developing the qualities of independent thinking, reasoning, and good judgement. McLeod (2010) endorses this claim. McLeod found that the relationship built with texts through the dialogue sessions enrich students’ existing schemata, which in turn enhances their learning in other classes. The resulting positive effects on confidence and strengthened thinking skills are then internalised through the social practices of intellectual exchange (Cam, 2006). If social interaction plays a significant role in the development of cognition and thinking strategies (Vygotsky, 1978), as well promoting motivation and self-confidence (Hinton, 2003), then it is plausible that COI may support children experiencing learning difficulties in the areas of self-regulated learning, academic self-efficacy and reading comprehension.

2.3.2 Community of inquiry

Community of inquiry (COI) is a methodology for implementing the literature based program, philosophy for children, developed by Matthew Lipman (1978). After studying the effects of philosophical thinking and inquiry on children’s cognitive skills, Lipman’s program was based on the theories of John Dewey who, “throughout his life was aiming at developing a Theory of Inquiry” (Lipman, 2004, p. 3). Lipman (1980) built on the original Deweyan concept of reflective thinking to develop a literature based program, philosophy for children, which is now implemented in many countries. The term “Philosophy for Children” has evolved to describe a method of stimulating reasoning and critical discussion skills, and is informed by Lipman’s theory. The term “Community of Inquiry” is an approach to teaching and learning that allows students to engage with the philosophy for children curriculum. It is broadly defined as a classroom pedagogy for developing student’s critical and creative cognitive skills through thinking philosophically in a collaborative learning community. The COI encompasses social interaction to stimulate interactive inquiry through questioning and the exchange of ideas, thus making the connection to Vygotsky’s (1978) social learning theory. In Australia, the Centre of Philosophy for Children was established in Melbourne in 1988 as a self-supporting unit within the Australian Council for Educational Research (ACER). The Queensland Association
of Philosophy for Children (now known as the Queensland Association of Philosophy in Schools) was formed in 1992. There are now many schools in Australia implementing the COI approach (Federation of Australasian Philosophy in Schools Associations, 2011) in order to provide a platform from which to develop student abilities in higher order thinking, balanced decision making, and sound judgement. Gardner (1998) claims “The community of inquiry enhances good thinking and develops good character” (p. 47), while Sharp (2004) suggests that it offers a democratic environment that can serve as an experience for students in seeking new possibilities and making judgements.

The COI procedure involves group or class participation in a formalised, interactive-dialogue setting within the classroom. It is usually conducted with the students seated in circle formation addressing topics drawn from story narratives, the curriculum or social issues. An environment is created where the students interact, discuss, and inquire together on common problematic subjects in such a way that they build on each other’s ideas, offer counter-examples, raise questions and encourage each other to construct alternative views or solutions to the problem at hand (Sharp, 2004). Discussions can be on authentic curriculum matters, narratives, or social topics, often drawn from a meaningful, shared story, which forms the initial stimulus. Kennedy and Kennedy (2011) argue that classroom philosophical inquiry is an inquiry into concepts that emerge and develop as a result of both experience and reflection. The concepts are approached initially as propositions which, when deconstructed, turn into open questions, thus challenging the students’ thinking. The questions are elicited from the members of the class group with a preference for open, thought-provoking questions that foster deeper thinking, reflection and reasoning during the course of the dialogue. The interaction incorporates structure and rules provided initially by the teacher as facilitator. Kennedy (1996) contends that, even with quite young children, the nature of this structured, collective dialogue is such that critical, creative, and collaborative kinds of thinking happen more or less spontaneously. Jenkins and Lyle (2010) found that, after only seven sessions, 10 year-old children had no difficulty forming questions that were open and required engagement with concepts. The students’ own sociocultural contexts and personal experiences are drawn on to support their views, and to link their ideas to those of the others in the group. This context allows them to make distinctions and connections.
across a range of experiences (Jenkins & Lyle, 2010). In these ways, the COI constitutes a real life model in which good thinking, good conduct, and intellectual growth come together (Splitter & Sharp, 1995).

Intellectual growth through the COI is confirmed by Topping and Trickey (2007a), who found that, weekly philosophical inquiry sessions with 10-12 year-olds, led to gains in overall cognitive ability. These findings revealed that the intervention group, compared with the control group, showed gains in measured cognitive ability largely irrespective of school, class or gender. The results of a further study by Topping and Trickey (2007b), found that the pre-post gains in cognitive ability were maintained two years later on the same measure. Jenkins and Lyle (2010) identified higher-order thinking, speaking, and listening in 10 year-old children previously assessed as poor readers. Through shared understandings, the COI integrates conceptual understandings across the curriculum, helping students to make connections between different areas of study (Dudley-Marling, 2004). Other studies on the COI (Hurley, 2003; Kennedy, 1996; Trickey & Topping, 2004) support positive academic outcomes from the COI teaching method and validate the longevity of the benefits. Trickey and Topping’s (2004) research review of COI findings found positive gains in academic attainment while studies on the COI in Canada have found advances in literacy development, particularly in boys (Leckey, 2000). Importantly, as Splitter (1993) points out, the nurturing of thinking skills through the COI process is relevant to all children, from those with learning difficulties to the gifted. Lyle and Thomas-Williams (2012) confirm that the evidence clearly shows that the COI has the potential to promote cognitive and affective academic learning development in the wider group of school children. The COI also provides a structure for independence in thinking and self-regulated behaviours. Specifically, it is an intervention directed at cognitive and metacognitive abilities that help children to help themselves. Cam (2006) argues that the social and metacognitive processes provide a platform for reasoned argument and making balanced judgements: “They (children) develop a method of behaviour for guiding themselves” (p. 9). Students with well-developed metacognitive skills become more effective, self-directed learners (Knight, Paterson, & Mulcahy, 1998). It is largely through the internalisation of social practices that the individual’s habits of independent thought and action are formed. According to Cam (2006), the COI has a
particular focus on thinking and conceptual exploration, therefore it has metacognitive benefits. Anderson (2005) found that, following COI sessions, the questions asked by children in Year 2 appeared to demonstrate more sophisticated and independent thinking and behavioural responses.

There is now sound evidence supporting the view that the practice of philosophical discussion improves children’s social behaviour (Millett & Tapper, 2012). Of the many approaches to classroom discussion and interaction, the COI appears the more holistic approach, in social terms, to the development of a child’s behaviour in the context of his peers, learning environment, and community. Central to the COI process are the ideas of respectful dialogue and reflection (Millett & Tapper, 2012). It is a social process and encourages the participants to observe, listen, converse, and interact together through the social and intellectual practice of thinking together (Cam, 1995) building on the students’ view of themselves.

A student’s self-perception is also supported through the process of listening reflectively and being listened to respectfully. This requirement in the COI process helps to build every student’s perceptions and beliefs about themselves (Hinton, 2003). Lewis (1996) suggests that the experience of not being listened to can have a potentially devastating effect on a child’s self-perception and learning, and also their view of themselves as people who have a say in their life. Similarly, peer and adult feedback affirms or disconfirms their developing sense of self, because healthy interpersonal communication is a process of “person building” (Nevins & Manning, 2002). The COI strategy is structured so that all participants can be heard and their views responded to with respect and consideration. Thus it seems to have the capacity to improve self-perception and produce emotional benefits that impact positively on learning. Most studies investigating the performance of children in a COI demonstrated that the participants developed confidence, learned better, were more engaged, and were building important thinking skills (Moorehouse, 1995). In a critical review of ten controlled studies, Trickey and Topping (2004) found evidence that children involved in COI gain significantly, in measurable terms, both academically and socially. Gardner (1998) conducted a two-year empirical research study on the COI in Canadian classrooms and found that there was a considerable increase in the students’ overall self-esteem. This finding is confirmed in a further (Trickey & Topping, 2006) study, with results indicating gains in measured self-
esteem as a learner. Jongsun (2010), in describing Year 3 student responses in the COI sessions, found the lower achieving students felt good about themselves when they had a chance to talk during the discussion.

Not all research studies investigating the benefits of the COI approach support the above positive attributes relating to cognitive and emotional development. Even the implementation of the program can be challenging. Leckey (2000) points out that implementing a Community of Inquiry can be a positive experience but also fraught with problems. In her study of year 7 students, Leckey found a high degree of negativity and boredom in some students, however, the outcomes still indicated gains in thinking, reasoning and literacy development. An investigation by Gracia-Moriyon et al. (2003) indicated inappropriate research methodology being used in a number of studies. In a meta-analysis of 116 studies, Gracia-Moriyon et al. had to exclude the majority because only 18 studies met the criteria in relation to defining the key areas of cognitive development and the validity of evaluation methods. In many COI studies, they found disagreement about the relevance of methods for analysing data and the definitions of key elements, for example, reasoning skills. They also had to exclude studies for not meeting the minimum criteria related to research design, methodology, and reporting. Deficiencies in much COI research have similarly caused Reznitskaya (2005) to draw attention to the lack of valid statistical procedures. She too supports the case for greater rigor in future studies on all facets of the COI approach based on Lipman’s (1978) philosophy for children. Reznitskaya also noted that some studies have cast doubt on the program’s longer term impact on students. Topping and Trickey (2007), however, found in their 2 year follow-up research that students maintained higher level thinking and enhanced self-esteem. The objectives of this current study include ensuring that the design is valid and the methodology thorough using comprehensive data collection tools. It is expected that the outcomes for this project will address a ‘gap’ in the literature which has not been previously researched, relating to the COI and how it impacts on the needs of children with learning difficulties.

Children having difficulty at school commonly lack self-esteem and have a need to feel positive about themselves (Bernard, 2001). As well as cognitive development, children with learning difficulties often have a range of emotional needs including confidence and self-belief (Hinton, 2003). The social context of the
COI appears to support these psychological factors including confidence, beliefs, and motivational aptitudes. Therefore, it appears to be a promising intervention for children with learning difficulties (Bosson et al., 2010). Other studies (Gardner, 1998; Trickey & Topping, 2004) similarly show that the COI environment has a positive influence on the self-perceptions of students with learning difficulties as well as their cognitive development. Jenkins and Lyle (2010) also found in the COI lessons that the children showed an increased confidence in their work across the curriculum. Both confidence and self-perception in children with learning difficulties are positively influenced through the process of communicating in a supportive environment where their views are accepted, respected and listened to. A further study (McLeod, 2010), described how the students listened closely to each other and provided grammatical and vocabulary assistance, allowing them to work within their zone of proximal development (Vygotsky, 1978).

These findings on the impact of the COI form the focus of this research project. There is evidence that the social-cognitive qualities of the COI develop reflective, strategic thinking as well as self-confidence and self-belief. If these attributes translate to self-regulated learning and academic self-efficacy, for children with learning difficulties, their academic outcomes including reading comprehension, should be affected positively.

2.3.3 Implications for children with learning difficulties

The central focus of the present study is to examine the COI, a social-cognitive approach to learning, and its impact on the academic functioning of children with learning difficulties. It should be noted that no previous studies have been identified in which the impact of COI was examined in relation to children experiencing learning difficulties. Accordingly, the present study should make a contribution to the field. It has been demonstrated that a COI has the capacity to build thinking strategies by enhancing metacognition thus promoting self-regulatory behaviours. The literature supports the construct of academic self-efficacy by endorsing COI as a conduit for building student confidence and self-belief. Therefore, there are implications for self-regulated learning, academic self-efficacy and potentially for reading comprehension. These implications are discussed below.
Implications for self-regulated learning:

Self-regulated learning requires an aptitude for strategy selection and strategy use (Chan & Dally, 2001), these being a function of metacognitive thought processes. The COI process is highly metacognitive (Cam, 1995). Through reflective listening and questioning in a COI, students also reflect on their own thinking and monitor their ability to reason and make judgements. For children with learning difficulties who often lack thinking strategies, the implications suggest that the social-cognitive qualities of the COI enhance self-regulatory cognitive processes. Increased independence in learning represents an impact on academic attainment, for example in reading comprehension. This connection is made by Garner (1992), who argues that interactive metacognitive activities such as predicting, questioning, and clarifying lead to improved powers of comprehension in the reading and writing processes. For students with learning difficulties, social-cognitive learning plays an important part in developing metacognition enabling them to transfer classroom knowledge and learning strategies to other parts of their lives (Wright, 1999). Both arguments align with Vygotsky’s (1978) theory that cognition originates in social interaction and that language is critical as it provides a means of expression and questioning and conceptual thinking. The COI is underpinned by these processes and through them children with learning difficulties develop self-regulated behaviours. The four phases of self-regulated learning (Pintrich, 2000) are forethought, control, monitoring, and reflection. These four phases are measured in the data gathering described in Section 3.2.2.

Implications for academic self-efficacy

Academic self-efficacy can be described as the capability to set learning goals in the belief that those goals can be achieved (Bandura, 1997). The literature demonstrates that, through the social learning environment of the COI, all participants are given equal opportunity to express themselves. It is an environment where their views are listened to and responded to in a respectful manner (Splitter, 1993). They interact, share, and build on each other’s ideas (Sharp, 2004), thus the fear of voicing opinions is alleviated through acceptance, improving communication skills, self-confidence, and self-regulatory thinking (Millett & Tapper, 2012). Academic self-efficacy is reinforced in this social-learning environment through fair-minded and constructive interaction with others. ASE is also fostered through the
broader understandings and the development of social dispositions that assist the students to be active participants (Cam, 2006). As motivation and confidence grow, they gain a sense of success through the influences identified by Bandura (1989) — success, observation, feedback, and physiological state. Each of these influences is measured in the data gathering described in Section 3.2.3.

**Implications for reading comprehension**

Reading comprehension is a critical academic goal for children with learning difficulties as reading skills impact on the broader curriculum. Studies of the COI approach show positive reading comprehension outcomes from elaborated dialogue for children with learning difficulties. For example, Baker and Gerston (2002) argue that interactive dialogue between students and teachers is a means of teaching reading comprehension. In a quantitative study focusing on self-regulation as a predictor of achievement in at-risk children, Howse et al. (2003) report that both motivation and self-regulation appear to be related to reading achievement. Children’s ability to self-regulate led to more positive achievement outcomes over and above the influences of prior reading ability. Both attentional regulation and motivational behaviours made an important contribution to early reading success. Jenkins and Lyle (2010), researching the impact of the COI on poor readers, found that by the end of the program they (low readers) were providing reasons for their answers without prompting. They then elaborated on their opinions to give their answers added credibility. McKenna and Kear (1990) argue for the importance of motivation and emotional responses with reading outcomes, and claim that the role played by student emotions and attitude is highly important in the process of becoming literate. The reading survey they have developed in pictorial form has a natural appeal and is comprehensible for children at a Grade 1 level. Similarly, Henk and Melnick (1995) claim that, children who have made positive associations with reading, have a deeper engagement in reading and greater reader self-efficacy. Hence the COI appears to have the capacity to support the wider curriculum, including the language goals of reading comprehension and writing. There also appears to be the additional benefit of verbal confidence and fluency (Hinton, 2003; Trickey & Topping, 2004). However, in the key areas under investigation in this study, specifically, self-regulated learning, academic self-efficacy, and reading
comprehension, there are strong indications that the COI, through its metacognitive qualities, may generate a positive influence on children with learning difficulties.

2.4 CONCLUSIONS

Understanding the complexity of learning difficulties is challenging as is designing appropriate support programs. The needs of children with learning difficulties can be cognitive or social-emotional but both can be supported through social-cognitive interventions. The literature indicates that children who engage in constructive, dialogue-orientated social behaviours are more likely to perform well academically than those who do not have this opportunity. Schooling is social by nature and there are positive indications that children with learning difficulties may benefit from teaching methods that embrace social practices. Social cognitive approaches encourage verbal confidence and the ability to articulate, reason and understand, thus enhancing procedural competence. The central theme in this study is about seeking an intervention that can improve the quality of learning and academic outcomes for that considerable group of children who experience learning difficulties. Skill-based intervention is crucial and fundamental to improving learning for these students. However, the literature strongly suggests that their needs are wider than teaching basic skills. Both cognitive and emotional hurdles must be addressed if students with learning difficulties are going to reach full potential. Hence a whole-child intervention process supporting both cognitive and social-emotional needs would appear to be an imperative. This study takes a social-cognitive approach to implementing an intervention procedure designed to help students become self-regulated thinkers and learners, while simultaneously supporting their belief that they can achieve. Through enhanced self-regulated learning and improved academic self-efficacy, these children should gain a sustained capacity to take charge of and enjoy learning by becoming active constructors of their own learning (Clay, 1991).

The intervention for students with learning difficulties adopted for this study, the community of inquiry, is reported to have cognitive benefits which impact on academic achievement or failure. These benefits include improvements in self-regulation in learning, academic self-efficacy beliefs, and reading comprehension. Studies showing improved reading comprehension subsequent to the COI process lend support to the argument that developing self-regulation and positive motivational behaviours, should assist children with learning difficulties in
developing their literacy skills. The COI has been well researched, as has the area of learning difficulties, however there is a dearth of literature on the impact of the COI on helping children with learning difficulties to become better learners. The literature has reinforced the plausibility of this study and confirmed the potential benefits of social-cognitive interventions to address the challenges of students with learning difficulties. Additionally, this approach could well assist academic achievement including reading skills. The literature has provided a reliable level of validation for the key principles underpinning this study as described in Section 1.3.

2.5 SUMMARY

In every classroom, there are children who make inadequate progress within the curriculum core skills and are identified as having learning difficulties. These children form the largest group of students with additional learning support needs in classrooms and most of these students will have difficulty in reading comprehension. The causes of learning difficulties are multi-faceted and there is often a complex interaction of contributing influences. Learning support methods must address a range of factors including basic academic skills, cognitive and metacognitive abilities including self-regulation, and emotional needs relating to self-efficacy beliefs. All of these domains can be implicated in difficulties with reading comprehension.

This study takes a social-cognitive perspective in examining learning support initiatives that address both the cognitive and the emotional needs of children with learning difficulties. The underlying areas of concern include first a need for cognitive strategies to build self-regulated learning skills. Second, the emotional considerations in learning difficulties require support in building confidence and self-belief to enhance academic self-efficacy. The literature indicates that social-cognitive interventions have positive implications for addressing self-regulated learning and academic self-efficacy in children with learning difficulties. One social-cognitive teaching strategy, the COI, appears to have benefits that relate to the needs of children with learning difficulties. Research indicates that the COI using classroom interactive dialogue enhances metacognition through its practices of intellectual exchange, thus promoting reasoning, reflection and independent thinking. These attributes help students to develop learning strategies with inherent implications for self-regulated learning. Research also suggests that the COI builds confidence and positive self-perceptions, demonstrating implications for academic self-efficacy.
Additionally, the COI seems to enhance conceptual understanding supporting the development of reading comprehension skills. This review of the literature has provided a coherent argument for investigating the COI’s capacity to generate a positive impact on the functioning of students with learning difficulties and helping them to become effective learners.
Chapter 3: Research Design

This chapter addresses the research design, research framework, methodology and methods used in conducting the present study. Section 3.1 describes the design and methodology, the research questions, and the intervention strategy. Section 3.2 describes methods used in collecting data. Section 3.3 describes the procedures for analysing the data and Section 3.4 discusses validity and ethical considerations. Section 3.5 provides a summary of the chapter.

3.1 RESEARCH FRAMEWORK

This section provides an overview of the research framework, the research design and methodology. Section 3.1.1 discusses the conceptual framework. Section 3.1.2 describes the case study design and Section 3.1.3 explains the intervention strategy. Section 3.1.4 discusses the participant selection process and overview of the study.

3.1.1 Conceptual framework

This study’s conceptual framework is guided by social-cognitive learning theory. Vygotsky’s (1978) social development theory has two key features of relevance for children with learning difficulties. First, Vygotsky argued that social interaction plays an important role in the development of cognition. Second, Vygotsky states that an individual’s potential for cognitive development depends upon the zone of proximal development. That is, the area of learning development that can be mastered alone, from a child’s current skill level to a higher level at which point assistance is needed. The community of inquiry (COI) provides a learning context in which the participants interact with the purpose of enhancing conceptual development and thinking strategies, and may assist children with learning difficulties in participation and growth within their zone of proximal development.

Bandura (1977) theorised that the four psychological influences of accomplishment, vicarious experience of personal performance in relation to others, feedback from peers and adults, and physiological state of confidence and enthusiasm, together impact on the level and strength of self-efficacy beliefs. These
four influences on academic self-efficacy play an important role in overcoming the emotional hurdles that many children with learning difficulties experience. Their physiological state of confidence, enthusiasm, and feelings of success in the classroom, create a powerful impact on their learning orientations. This study investigates the capacity of the COI and its supportive social learning environment to alleviate the emotional barriers that children with learning difficulties often experience.

The research problem encompasses both the cognitive and emotional hurdles encountered by students who experience difficulties in their learning. It is hypothesised that, with participation in COI lessons, students with learning difficulties could acquire an increased level of self-regulated learning (SRL), enhanced academic self-efficacy (ASE), and improved attainment in reading comprehension. The research framework incorporates these considerations through the research problem, the intervention for children with learning difficulties, and the research questions. Figure 3.1 illustrates the research framework.
RESEARCH FRAMEWORK

<table>
<thead>
<tr>
<th>RESEARCH FOCUS</th>
<th>Children with learning difficulties.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH PROBLEM</td>
<td>Limited skills in SRL.</td>
</tr>
<tr>
<td>Diminished ASE.</td>
<td>Low reading comprehension skills</td>
</tr>
<tr>
<td>CONCEPTUAL FRAMEWORK</td>
<td>Vygotsky (1978).</td>
</tr>
<tr>
<td>Bandura (1977).</td>
<td></td>
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<tr>
<td>SELECTED INTERVENTION</td>
<td>The COI, which is claimed to develop</td>
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<tr>
<td></td>
<td>thinking strategies, metacognition,</td>
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<td></td>
<td>confidence and enhanced self-directed</td>
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<tr>
<td></td>
<td>learning.</td>
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<tr>
<td>RESEARCH QUESTIONS</td>
<td>What impact does participating in</td>
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<td></td>
<td>the COI process have on students</td>
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<td></td>
<td>with learning difficulties?</td>
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<td></td>
<td>What impact does the COI appear to</td>
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<td></td>
<td>have on students’ self-regulated</td>
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<td></td>
<td>learning skills?</td>
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<td></td>
<td>What impact does the COI appear to</td>
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<td></td>
<td>have on students’ academic self-</td>
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<tr>
<td></td>
<td>efficacy?</td>
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<td></td>
<td>What impact does the COI appear to</td>
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<td></td>
<td>have on students’ reading</td>
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<tr>
<td></td>
<td>comprehension?</td>
</tr>
<tr>
<td>RESEARCH DESIGN</td>
<td>Case study investigating the COI.</td>
</tr>
</tbody>
</table>

*Figure 3.1. Research framework.*
3.1.2 Case study design

This research used a case study design (Yin, 1994) to explore the impact of a social-cognitive intervention strategy, the community of inquiry, on children with learning difficulties. The context of the study was a typical classroom setting and the main aim was to examine the impact that the COI appears to have on the students experiencing learning difficulties. A further objective was to gain an understanding of the student responses relating to SRL and ASE during the discussion and inquiry process by observing and evaluating the responses during the lessons. Hence the project explores a learning context where the researcher has minimal control over the events taking place. This qualitative research is a naturalistic inquiry (Lincoln & Guba, 1985), which involved continuous observation of the participants in a classroom. The structured COI sessions were conducted twice per week and each lesson was of approximately 40 minutes duration. A COI session involves interactive dialogue where questions, preferably open-ended, are addressed as the children sit in a circle interacting, listening, reflecting, articulating, and exchanging viewpoints. In these circumstances, data gathering was a complex process entailing multiple methods – observations, interviews, questionnaires, and document analysis (Marshall & Rossman, 1999). By seeking to understand as much as possible about a small group of students, this case study focused on in-depth data with comprehensive descriptions of the classroom lessons in question. The participants in the case-study comprised six Year 4 students with learning difficulties, all of whom were part of their regular class during the COI lessons and the continuous observations that enabled the data gathering. Although data was collected and presented in tabular form for all six participants, due to the large quantity of data involved only two students were selected to represent the overall data presentation for each measuring instrument. They were the two students with the highest and lowest scores in each area relating to the three research questions. To profile more comprehensively the changes that occurred as a result of experiencing the COI, the results for one of the participants were selected for closer analysis in an individual report. Chapter 8 reports on the overall results for Anna, and describes her progress across the full extent of the study. This chapter responds to the main research question in a case report on Anna providing an illustrative example of how one student with learning difficulties was influenced by the COI teaching method.
3.1.3 Participants

The school was of medium size located in a typical urban, community setting in a Central Queensland regional city similar to many other towns with a 50,000 to 100,000 population. The community included several primary and secondary schools. The student roll numbered a little under 300 students with a staff of approximately 22 teachers and administrators. The school measured close to average on the socio-economic advantage scale (ICSEA, 2012). As well as the work carried out in the classrooms by the learning support staff it was important to have all staff informed and supportive of the research project. Communication to this effect was made at staff meetings. After gaining approval from the school principal and class teachers involved, a purposive sampling was made to identify six Year 4 children aged eight to nine years, with learning difficulties. The six children selected all had learning support needs in literacy, identified by means of the “early years net” (Education Queensland, 2000). This assessment procedure was initiated prior to the implementation of the Australian National Assessment Program for Literacy and Numeracy (NAPLAN). The “early years net” which is designed to identify children experiencing difficulties, involves assessments at the end of Year 2 to identify individual areas of difficulty. The learning difficulties of the students participating in the study were also confirmed in discussion with the classroom teacher. There were four boys and two girls. Written consent was obtained from the students and the parents or guardians of the students selected to participate in the study.

The teacher was provided with background information on COI procedures as well as training in COI techniques by the researcher. The researcher was qualified for this role and also the role of facilitator during the COI lesson implementation for the class of 26 students including the six participating students with learning difficulties. The teacher was confidently prepared to be involved as observer, and every effort was made to support her when impositions were made on the classroom environment, for example in the monitoring of student learning logs. The school principal also cooperated to ensure the success of the research program, showing his support throughout its duration over the full four terms of the school year. An overview of the essential components of study is presented in Figure 3.2. Essential components of the study.
# OVERVIEW OF THE STUDY

<table>
<thead>
<tr>
<th>SELECTED SITE</th>
<th>Local government school (average size and socio-economic context) regular class group</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTICIPANTS</td>
<td>Group of 6 students in existing class group</td>
</tr>
<tr>
<td>MAIN RESEARCH QUESTION</td>
<td>What impact does participating in the community of inquiry (COI) process have on students with learning difficulties?</td>
</tr>
<tr>
<td>DESIGN</td>
<td>Case study</td>
</tr>
</tbody>
</table>
| DATA GATHERING | Collaborative observations  
Learning logs  
Field notes  
Semi-structured interview (pre- and post-)  
Interactive questionnaire (pre- and post-)  
Think-aloud analysis (pre- and post-)  
Reading comprehension tests (pre- and post-) |
| DATA ANALYSIS | Analysis of changes in SRL, ASE, reading comprehension and links to COI             |
| FINDINGS      | Student development in terms of responses to the research questions                 |

*Figure 3.2. Essential components of the study.*
3.2 DATA COLLECTION METHODS

The data collection methods are clustered to align with each research question. The preamble (Section 3.2.1) is followed by a description of the methods used for self-regulated learning (Section 3.2.2), academic self-efficacy (Section 3.2.3), and reading comprehension (Section 3.2.4).

3.2.1 Preamble

The selected data gathering methods have been informed by previous research (Pintrich, 2000, Brown & Pressley, 1994, Jinks & Morgan, 1999, Howard et al., 2000, Dowson & McInerney, 2004). The methods are designed to further investigate the COI’s impact on cognitive and emotional development in students, in particular students with learning difficulties. They reflect the specific educational setting from the participants’ perspectives (Burns, 2000). Because of the nature of the interactive speaking and thinking processes involved in a COI lesson, the study was designed to apply a range of methods for collecting data. To explore children’s learning in this regular classroom setting, the data collection has combined informal and formal approaches involving interviews, observations, questionnaires, artefacts and tests. The data also include anecdotal information and field notes drawn from the COI lessons, related written activities, and video footage, which was reviewed at the end of each week. Multiple methods have been utilised to uncover the relationship between the social and individual processes that shape SRL in context (Butler, 2002).

The data were recorded in a data bank for each of the participating students. Each student’s data bank was organised into three sections relating to the research questions—self-regulated learning, academic self-efficacy, and reading comprehension. There were several different methods of collecting the data requiring different forms of presentation. The pre-and post-COI recording of student data varied according to the research question. For example there were different processes for recording interview results (SSI), questionnaire results (ISQ) or quantitative testing as in reading comprehension. The rationale for the different presentations of the data across chapters 5, 6 and 7 was based on utilising a format that would appropriately accommodate the recording and facilitate the data analysis.
Data collection procedures are now described for each component of the main research question.

3.2.2 Self-regulated learning

Sub-question 1: What impact does the COI appear to have on students’ self-regulated learning skills?

The exploration of independent thinking strategies associated with self-regulated learning is based on the model developed by Pintrich (2000). The four phases of SRL, according to this model, are forethought, control, monitoring, and reflection. This sub-question was explored through informal data gathering including interviews, observations, and a think-aloud (Brown & Pressley, 1994). The results were assessed numerically to facilitate comparisons between each student. Three data collection processes address this sub-question Table 3.1.

Table 3.1
Data Collection Processes for Sub-question 1

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-structured Interviews</td>
<td>Using 20 stimulus questions</td>
</tr>
<tr>
<td>Think-aloud analysis</td>
<td>Elicit SRL responses to recommended story</td>
</tr>
<tr>
<td>Collaborative observations</td>
<td>Combined researcher and teacher COI observations, student written activities,</td>
</tr>
<tr>
<td>synopsis</td>
<td>anecdotal classroom observations, and video information</td>
</tr>
</tbody>
</table>

Semi-structured interview

Each of the six focus students participated in a semi-structured interview pre- and post- the COI intervention. The semi-structured interview schedule included stimulus questions adapted from the metacognition and self-regulation questionnaires used by Howard et al. (2000), as well as the goal orientation and learning strategies survey used by Dowson and McInerney (2004).

The questions were posed informally during the interview, which took approximately 30 minutes. The interviews were conducted with each individual
student in a room adjacent to their classroom. Pre-COI interviews were conducted in early March and the post-COI interviews in November. On each occasion, the student was made to feel at ease by being informed that the discussion was not a test but an opportunity to show how well they were progressing at school. A voice recorder was used unobtrusively, with the student’s permission. The researcher also took field notes. Although the interview was conducted as an informal discussion, the questions, both pre- and post-COI, were introduced in a prearranged order. There were 20 questions in total (see Appendix A), covering the four phases of SRL. Each question addressed a specific component skill for each phase Table 3.2.

Table 3.2

Four SRL Phases and their Related Component Skills

<table>
<thead>
<tr>
<th>Forethought</th>
<th>Monitoring</th>
<th>Control</th>
<th>Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>planning</td>
<td>metacognition</td>
<td>recall skills</td>
<td>self-judgement</td>
</tr>
<tr>
<td>task interest</td>
<td>experimentation</td>
<td>strategy selection</td>
<td>self-instruction</td>
</tr>
<tr>
<td>efficacy judgement</td>
<td>self-observation</td>
<td>strategy adaption</td>
<td>attribution factors</td>
</tr>
<tr>
<td>goal setting</td>
<td>need for help</td>
<td>locus of control</td>
<td>choice behaviours</td>
</tr>
<tr>
<td></td>
<td>self-correction</td>
<td>persistence</td>
<td></td>
</tr>
</tbody>
</table>

The following questions are examples of those included in the interview. A full list of questions is presented in Appendix A.

- When you have a problem, how do you go about choosing the best way to solve it? [planning]
- What are some of the things that make you want to work hard at school? [task value and interest]
When you are completing a task, do you bring together different bits of information to help you? [metacognitive knowledge]

If you get stuck on a problem, do you go back and try another way? [adapting strategies/alternatives]

Do you like completing tasks on your own or do you prefer to get lots of help along the way? [locus of control]

What ways do you use to check your work? [evaluating]

**Think-aloud analysis**

A think-aloud analysis (TAA) (Brown & Pressley, 1994) was implemented to further investigate each student’s SRL. The think-aloud analysis procedure was designed to facilitate verification and authentication of the self-regulated learning data collected through the semi-structured interviews. The TAA involved a reading exercise based on the Aesop’s Fable, “The Greedy Dog and the Bone” (Smith & Nelley, 2002). This story was selected because of its appropriate level of difficulty for children aged six to seven years. The ages of the participant students with learning difficulties were eight to nine years. Also, the story had four natural breaks, which offered appropriate titled points for introducing the questions. Before reading the TAA story, each student was invited to peruse the book including the cover. In order to gather information about their use of forethought, they were then asked, “How do you decide whether this will be a good story?” Next, the students read the story aloud and were assisted with any difficult words. After each segment, the students were asked three further questions to elicit information relating to their use of monitoring, control and reflection.

- What are you thinking?
- What happened on this page?
- Is there anything else you can tell me before we read on?

The TAA lasted approximately twenty minutes and the responses were collated from written notes and audio recordings. The post-intervention assessment was conducted in the same manner but using another fable, “Great Lion and Tiny Mouse”, which had a similar level of reading difficulty. It also had four natural
breaks for introducing the questions. The students’ responses were recorded on think-aloud response charts (Appendix D).

**Collaborative observations**

Collaborative observations were taken by both the classroom teacher and the researcher, and included data from observations of the COI sessions, reviewing videotapes of lessons, and anecdotal classroom records. The teacher recorded notes with specific regard to the students’ development of SRL during every COI lesson. Guidance in the COI procedure was provided by the researcher prior to the study, and an observation folio facilitated recording the frequency and quality of students’ verbal participation. During the COI sessions, student responses were assessed on a three-level scale; high, average or low. Any significant behavioural factors were recorded. The COI lessons were also directly observed by the researcher. The observations were directed to the students’ responses to the questions in the dialogue: frequency of responses; apparent level of skills; abilities; and dispositions that build SRL. Development in independent thinking, confidence, and communication skills were also monitored. A collaborative observations synopsis (COS), or statement, drawing on all observation data (Appendix C), was completed for every component in each phase of SRL. The COS, comprised a progress report based on recorded observations, anecdotal observations and video review by both researcher and teacher. The collaborative observations of student engagement throughout the COI process and related classroom activities, were summarised in a collaborative report during the pre-COI and post-COI phases of the study and summaries were made monthly throughout the study. The COS data also included responses from each student’s learning log, student written activities, and anecdotal classroom observations.

**3.2.3 Academic self-efficacy**

Sub-question 2: What impact does the COI appear to have on students’ academic self-efficacy?

Unlike self-regulation, which involves the development of cognitive strategies and action plans, academic self-efficacy relates to belief development. However, as Borkowski (1992) points out, there is a reciprocal relationship between SRL and self-efficacy beliefs as a learner. Data for investigating the influences of the COI on
academic self-efficacy were gathered from three sources: the interactive (involving discussion with the researcher) student questionnaire (ISQ); student learning log; and a collaborative observations synopsis (Table 3.3).

Table 3.3
**Data Collection Processes for Sub-question 2**

<table>
<thead>
<tr>
<th>Data Sources</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a. Interactive student questionnaire</td>
<td>Administer questionnaire for academic self-efficacy beliefs</td>
</tr>
<tr>
<td>2b. Learning log</td>
<td>Prepared recording booklets provided. Information from learning logs was integrated with information from the collaborative observations</td>
</tr>
<tr>
<td>2c. Collaborative observations synopsis</td>
<td>Researcher and teacher observations of COI interactions, anecdotal classroom observations, learning logs and video information</td>
</tr>
</tbody>
</table>

**Interactive student questionnaire**

A questionnaire, focusing on academic self-efficacy beliefs, was administered individually in an interactive (discussion) format in a relaxed environment for pre- and post-COI collection of data. Questions from the Jinks and Morgan (1999) self-efficacy scale were used for this data gathering instrument. The ISQ, comprising 30 statements focusing on ASE beliefs, was administered to the children individually in a relaxed environment pre- and post-COI. The questions required the students to select one of four options—strongly agree, agree, disagree, and strongly disagree. To assist the children in choosing their response, each of the four options was accompanied by a cartoon face with an appropriately configured facial expression (Appendix F). The 30 questions reflected the four influences on academic self-efficacy, namely, success, observational comparison, feedback, and physiological state. These influences reflect the self-efficacy theory of Bandura (1977).
To facilitate the effectiveness and structure of the ISQ, the Jinks and Morgan (1999) inventory scale for perceived academic self-efficacy (MJSES) was accessed because of its relevance to one of the key aims of this study. This aim was the investigation of children’s academic self-efficacy beliefs to gain insights regarding changes in their perceptions of their own academic performance. The MJSES inventory scale was considered appropriate because, as Jinks and Morgan suggest, this instrument could be applicable in program evaluation research. It is particularly relevant in those studies involving investigations that encompass a range of learning variables (Jinks & Morgan, 1999). The MJSES has since been implemented by numerous authors for investigations similar to this study, for example, on student self-efficacy, academic performance, and diligence (Honea, 2007), hence it is relevant to academic self-efficacy.

The MJSES questions were, in the main, loaded onto two general areas labelled talent and context (Jinks & Morgan 1999), with four questions placed in the effort category. As sub-question 2 in this study draws on social learning theory (Bandura, 1977), the four self-efficacy influences formed the theoretical perspective for this data gathering instrument. Hence, the categories for the ISQ were aligned with Bandura’s sources of self-efficacy. The MJSES questions were reallocated to these areas and then assigned to the interactive student questionnaire as follows:

- MJSES talent questions were allocated to success and physiological state. Three examples are listed below.
  - Sometimes I think the work is easy when the other kids think it is hard
  - I am quite smart
  - I am a good reading student

- MJSES context questions were allocated to observation and feedback. Three examples are listed below.
  - Teachers like kids even the ones who don’t get good grades
  - My teacher thinks I am smart
  - Some kids get better grades than I do but they get more help from the teacher.

- MJSES effort questions were allocated to persistence (success). An example is given below.
  - I always get good grades when I try hard

Some of the questions were modified slightly for ease of interpretation by children with learning difficulties. The following are examples.
The MJSES question, *I usually understand my homework assignments*, was modified to, *I usually understand how to do my homework*.

The MJSES question, *I will graduate from high school*, was modified to, *I’m sure I’ll do well at high school*.

The questions were printed on six pages, in large type, each with an accompanying Likert-scale set of options to select from for each response (Appendices E and F). The interactive nature of the questionnaire allowed the students to talk about the questions with the researcher and to clarify any questions that were puzzling as they completed the task. Each question was followed by an illustration depicting four faces representing agreeing strongly, agreeing, disagreeing, and strongly disagreeing respectively. The 30 questions reflected the four influences on self-efficacy, namely, success, observational comparison, feedback, and physiological state (Bandura, 1977). There were three focus components for each influence (Table 3.4).

Table 3.4

*Influences for Academic Self-efficacy and Associated Components*

<table>
<thead>
<tr>
<th>Influence</th>
<th>Success</th>
<th>Observational comparison</th>
<th>Feedback</th>
<th>Physiological state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>motivated intrinsically</td>
<td>motivated extrinsically</td>
<td>confidence</td>
<td></td>
</tr>
<tr>
<td>belief in success</td>
<td>self-perception</td>
<td>awareness</td>
<td>enthusiasm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>as a learner</td>
<td></td>
<td>of own skills</td>
<td></td>
</tr>
<tr>
<td>Persistence</td>
<td>acquires skills</td>
<td>adjusts</td>
<td>comfort in learning setting</td>
<td>goals accordingly</td>
</tr>
</tbody>
</table>

Each of the ISQ questions addressed a specific element of the ASE components (Jinks & Morgan, 1999). Some of the questions were reversed to ensure that the
participant did not spontaneously agree with all questions. During the ISQ, a voice recorder was used, with the student’s permission, while the researcher took notes.

The following are examples of the ISQ questions:

- I am good at writing stories. [success]
- Sometimes I think the work is easy when the other kids think it’s hard. [observation]
- People in my family think I am a good at my schoolwork. [feedback]
- I enjoy working hard and learning new things. [physiological state]

**Learning logs**

Throughout the COI, fortnightly learning logs (Hurley, 2003) enabled the participating students to record personal perceptions about their learning experiences. Learning logs (Appendix L) provided information relating to change in the students’ perceptions across the period of the study. Notes were made by the researcher on the learning log spreadsheet to collate relevant information and the classroom teacher assisted the children, if it was considered necessary, with writing and spelling as they described their perceptions of the week’s learning activities.

Some of the students had difficulty with writing and needed assistance in getting their thoughts down in written form. The format comprised a set of questions pertaining to the four ASE influences to gauge their sense of success, observations of others, feedback, and their comfort in the learning environment. Pictorial faces, denoting a happy (or unhappy) face for each issue, assisted the students in describing their levels of satisfaction with their schoolwork.

**Collaborative observations**

Collaborative observation data were comprised of notes made by the researcher in relation to the sources of academic self-efficacy. The classroom teacher took notes informally with specific regard to academic self-efficacy development. Anecdotal information was noted in the form of field notes during COI lessons pertaining to changes in student skills and achievement. Further, observational data were gathered from video footage of individual responses during the course of the COI discussions. These data sources provided an insight into the students’ ASE development during the COI. This information was recorded on the observation spreadsheet (Appendix
H) by the researcher as a synopsis for each component of the four ASE influences—success, observation, feedback, and physiological state.

### 3.2.4 Reading comprehension

Sub-question 3: What impact does the COI appear to have on students’ reading comprehension?

The third sub-question was examined using three reading comprehension assessment tests as shown in Table 3.5 and described subsequently.

Table 3.5

<table>
<thead>
<tr>
<th>Data Sources</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neale Analysis of Reading Ability</td>
<td>administer running record</td>
</tr>
<tr>
<td>Waddington Diagnostic Reading Test</td>
<td>administer test</td>
</tr>
<tr>
<td>PM Benchmark</td>
<td>administer running records</td>
</tr>
</tbody>
</table>

**Neale Analysis of Reading Ability**

The Neale Analysis of Reading Ability (NARA) (Neale, 1999) was used to assess the participants’ reading comprehension abilities. This reading test is designed for use with students from 6 to 12 years of age and was administered individually according to the procedures specified in the test manual. Assessments were conducted at the beginning of the study, and at the conclusion of the study. The NARA provides data on comprehension and reading speed, but for this study the focus was on comprehension; that is, the students’ ability to conceptualise and gain meaning from text. A “running record” was completed for each student on a series of short, graded passages. These were read aloud by the students, while being timed with a stop-watch. The students were then asked eight comprehension questions. The results from the raw score summary were transferred to a standardised summary and then reading age equivalents for comprehension were calculated. The data were collated on the summary form (Appendix I) for both pre- and post-COI testing.
**Waddington Diagnostic Reading Test**

The Waddington Diagnostic Reading Test (Waddington, 2000) was also used to assess the students’ reading comprehension skills. This test was administered to the participants individually, pre- and post-COI. All relevant procedures outlined in the test manual were followed to ensure that the results across the participants were reliable and valid (Appendix J). The results were used for triangulation with the results from the NARA.

**PM Benchmark**

To further triangulate the comprehension results, PM Benchmark (Smith & Nelley, 2002) was administered to obtain additional results to compare with the reading levels of the NARA and Waddington tests. A “running record” score sheet was used to collect data which were recorded on an analysis table (Appendix K).

### 3.3 DATA ANALYSIS

The data analysis procedures are outlined according to each research sub-question. The preamble (Section 3.3.1) is followed by the analysis procedures used for self-regulated learning (Section 3.3.2), academic self-efficacy (Section 3.3.3), and reading comprehension (Section 3.3.4).

#### 3.3.1 Preamble

The data were analysed using procedures appropriate to each data collecting method. Data analysis procedures included; identifying response patterns, tabulating response frequency counts, and comparing pre- and post-COI reading comprehension ages on each reading test. An overview of the data and the associated methods of analysis is shown in Table 3.6.
Table 3.6

*Overview of Data Analysis Methods*

<table>
<thead>
<tr>
<th>Data collection methods</th>
<th>Data analysis method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews: student interviews, think aloud analysis</td>
<td>Response patterns and changes related to the sub-questions</td>
</tr>
<tr>
<td>Observations: field notes, audio and video data</td>
<td>Attitudinal changes related to the sub-question components identified by comparing COI responses over time</td>
</tr>
<tr>
<td>Questionnaires and surveys</td>
<td>Responses identified in pre- and post-COI likert scale analysis</td>
</tr>
<tr>
<td>Artefacts: Learning logs</td>
<td>Changes in self-perception and thinking attributes related to the sub-questions were identified pre- and post-COI</td>
</tr>
<tr>
<td>Tests: Reading comprehension</td>
<td>Pre- and post-COI reading age scores</td>
</tr>
</tbody>
</table>

### 3.3.2 Self-regulated learning

Sub-question 1: What impact does the COI appear to have on students’ self-regulated learning skills?

The following analysis procedures include three SRL data collection measures—semi-structured interview, think-aloud analysis, and collaborative observations.

*Semi-structured interview*

Following the interviews with each of the six participating students, their verbal responses, elicited from the 20 questions used in the interview, were recorded below the appropriate question on the individual question chart. This recording facilitated the analysis of each response, as it could be directly associated with the question and SRL component. Each response was colour-coded for easy identification according to the SRL phase to which it pertained. Additionally, the responses were evaluated on a five-point scale from one (low skill level) to five (high
skill level) on the SRL response record. Each response was evaluated according to the level of aptitude in each SRL component, for example, *planning* was one component of the forethought phase of SRL. Evaluations for each response were corroborated by the classroom teacher. These collaborative evaluations (Appendix B) were recorded pre- and post-COI, and an analysis made on the changes in each component across the duration of the study. Each student’s progression was described as nil, minimal, moderate, or substantial development, according to the pre- to post-COI change. A brief written assessment for each response was included and verified by an independent adjudicator, a support teacher for students with learning difficulties, to corroborate the comment and its assessment of the student’s SRL skill level. The classroom teacher also assisted with interpreting the responses. Both pre- and post-COI analyses for each component; forethought, control, monitoring, and reflection, were compared and the changes recorded on the post-COI SRL response record (Appendix B). Additionally, a post-COI analysis of the five-point scale evaluations was made to show the overall changes for the six students. A comparison of the changes for each student facilitated the selection of two representative students for the presentation of results. These will be the two participants who demonstrated the highest progression and the lowest progression in each of the four phases of SRL thus providing an overall results profile. The evaluations of the semi-structured interview responses are recorded in tabular form in the relevant sections in Chapter 5. Table 3.7 provides an example of the recording format.

Table 3.7

*Pre- and Post-COI Scores and Changes for Forethought*

<table>
<thead>
<tr>
<th>Students</th>
<th>Pre-COI score</th>
<th>Post-COI score</th>
<th>Progression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corby</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brendan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anna</td>
<td></td>
<td></td>
<td>These cells are intentionally left blank</td>
</tr>
<tr>
<td>Emma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brady</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darren</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To complete the SSI analysis of the development for each student, their pre- and post-COI responses to each question were entered on a table specific to each of the four SRL phases, similar to Table 3.7 for forethought. These entries provided a reference point for analysing the changes in each component over the duration of the study.

**Think-aloud analysis**

The TAA data was primarily applicable to the two SRL phases, forethought and monitoring. The TAA data were analysed by evaluating pre- and post-COI skill levels in each response to questions relating to what was occurring in the story. Two stories were selected, one for the pre-COI data and a second story for post-COI data. Both stories, “The Greedy Dog and the Bone” and “Great Lion and Tiny Mouse”, were of similar reading difficulty, indicated by the PM Benchmark (Smith & Nelley, 2002) instructional reading level classification. Verbal responses to the questions asked at each story break were recorded on the individual response chart (Appendix D) beside the relevant section of the narrative. Responses were assessed according to the level of forethought and monitoring, and then assigned an interpretive comment, which was also recorded on the response chart.

**Collaborative observations analysis**

Observations of student responses and questions and relevant anecdotal information were recorded on a spreadsheet. This record provided a measure of the total number of contributions made by each student, as well as the changing calibre of the arguments they presented. To gauge the impact of the COI on student thinking over time, data was collated from seven consecutive lessons in the first seven weeks of the study, and again from seven consecutive lessons in the concluding seven weeks. These data provided comparative measures of the quality of student interaction and SRL attributes. The COI observations, recorded by the classroom teacher, were analysed as follows. Each time a student contributed to the interaction, the teacher noted the involvement frequency and appraised the quality of the communication, rating it on a three-tier scale:

- **H** = high level reasoning
- **A** = average reasoning
- **L** = low level reasoning
This assessment was recorded on a table for each participant, as well as an assessment data sheet for the class as a whole, showing the number of interactions for each student, the skill level for each interaction, and each student’s overall skill increase. These records provided the interaction frequency and reasoning ability of the students. This data was integrated with anecdotal observations, video information and COI written activity outcomes, to inform the collaborative discussions between the teacher and the researcher. The collective information provided a means of evaluating changes in the SRL development for each student. A pre- and post- COI synopsis for all SRL components was recorded on the collaborative observations chart (Appendix C).

### 3.3.3 Academic self-efficacy

Sub-question 2: What impact does the COI appear to have on students’ academic self-efficacy?

The following analysis procedures include three ASE data collection measures; the interactive student questionnaire, collaborative observations synopsis, and the learning log which was supplementary to the COS.

**Interactive student questionnaire (ISQ)**

The ISQ procedure required the students to respond to 30 statements across the four ASE influences. There were 10 responses required for success, seven for observational comparison, five for feedback and eight for physiological state. Within each influence, the questions pertained to a component of that influence. The responses were analysed in terms of the number of progressions. For example, a change from *agree* in the pre-COI questionnaire to *strongly agree* in the post-COI questionnaire equated to one progression. These progressions were collated on the ASE results analysis file (Appendix G) thus indicating the direction of change from the pre-COI responses to the post-COI responses.

Pre- and post-COI entries are reported with the component, indicated by its initial letter and the ISQ statement number for example; S\(^{13}\) equals self-belief statement number 13. For every component, the number of progressions for all participants was totalled to facilitate the selection of the two students with the highest and lowest outcomes.
Learning log

Learning log data provided supplementary information to support the collaborative observations. It was analysed with reference to the ASE influences and components, and recorded on a student profile, the learning log analysis chart (Appendix M). To establish a change in perception, five consecutive learning logs, for each of the six students with learning difficulties were selected to ascertain each student’s responses for early semester one, and another consecutive five were selected in late semester two. The learning log entries were used to gauge the level of aptitude within each ASE influence. For each entry, interpretive comments were entered to describe the degree of motivation, persistence, confidence and general sense of academic self-efficacy belief. To compare reactions from one student to another, an assessment was made relating to the level of development for each component. The recorded commentary on the learning log analysis chart provided supporting data for the collaborative observations.

Collaborative observations synopsis (COS)

Observations by both researcher and the classroom teacher, the learning log data, all student written activities, and video information, were collated and evaluated collaboratively in terms of the four ASE influences and their related components (Table 3.8).

Table 3.8
ASE Influences and Components for Observational Analysis

<table>
<thead>
<tr>
<th>Success</th>
<th>Observational comparison</th>
<th>Social feedback</th>
<th>Physiological state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating</td>
<td>Intrinsic motivation</td>
<td>Extrinsic motivation</td>
<td>Self-confidence</td>
</tr>
<tr>
<td>Self-belief</td>
<td>Self-perception</td>
<td>Recognition of skills by others</td>
<td>Enthusiasm</td>
</tr>
<tr>
<td></td>
<td>as a learner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persistence</td>
<td>Skill acquisition</td>
<td>Adjusts goals</td>
<td>Comfort within learning environment</td>
</tr>
</tbody>
</table>

Both learning log data and observations of written activities completed at the conclusion of each COI lesson provided evidence of progression in skill areas and changes in confidence, motivation, and self-perception. Motivation, including both intrinsic motivation (derived from enthusiasm) and extrinsic motivation (derived
from feedback and other incentives) was monitored and noted pre- and post-COI. Examination of video footage provided insight relating to communication confidence and changes in levels of persistence, while the student learning logs provided data relating to each child’s perceptions of success, enthusiasm levels, and comfort in the learning setting. Comments were recorded on each entry in the learning logs and transferred to the individual student learning log analysis chart (Appendix M) as a pre-COI summary of aptitude level and a post-COI comparative summary. The summaries covered each of the four ASE influences. An assessment of change in each component was made to compare the progressions of each of the six participants (Appendix H).

These results, linked with COI observations, video information and the results of student follow-up activities, provided the data for collaborative discussions between teacher and researcher for the purpose of interpreting and evaluating ASE changes for each student. A synopsis was then recorded in the student’s observation data bank (Appendix H).

3.3.4 Reading comprehension

Sub-question 3: What impact does the COI appear to have on students’ reading comprehension?

The analysis procedures for the four sources of data are described in turn.

**Neale Analysis of Reading Ability**

The Neale Analysis of Reading Ability comprised a series of six graded passages each with a central theme. Two parallel sets, at similar levels of difficulty, provided for both pre- and post-COI testing. Each student read the stories aloud and was then asked six to eight questions relating to the use of context, sequence, and recall of the main ideas. The responses, together with running record results, facilitated analysis of each student’s reading ability. This diagnostic method of analysis established results for both accuracy and comprehension; however, the focus was on reading comprehension. A reading comprehension age was obtained by applying the raw scores to an appropriate conversion table reflecting national profile levels (Appendix I). Results were collated on the Neale Analysis summary form A for pre-COI results and form B for post-COI results, and then compared. The data relevant to the study was the change in reading comprehension age over the nine-month study period.
**Waddington Diagnostic Reading Test**

Students’ responses on the Waddington (2000) Diagnostic Reading Test were analysed according to the Waddington protocol. Results are presented on a Waddington assessment score sheet (Appendix J) giving a comprehension age and a percentage improvement. Similar to the Neale test, the Waddington test provided each student’s reading comprehension age. The assigned reading ages on the Neale and Waddington tests were compared for consistency and variations were noted.

**PM Benchmark**

Comprehension reading ages were calculated according to the PM formula and level system (Appendix K). Running records on specifically graded reading texts provided a reading level and a reading age. This provided a third reading comprehension age for comparative evaluation. In the final analysis on reading comprehension, these scores were compared with the Neale and Waddington data to achieve a valid result.

### 3.4 VALIDITY AND ETHICS

This final component of the chapter discusses the effectiveness of the research design in supporting a high degree of validity within the data gathering methods. Section 3.4.1 expands on the trustworthiness of the methods, while Section 3.4.2 describes the ethics procedures.

#### 3.4.1 Validity and trustworthiness

The trustworthiness of the qualitative component of this study involved consideration of its credibility, transferability, and dependability, (Lincoln & Guba, 1985). The convergence of information from multiple sources supported credibility, while the nine month data collection period allowed for a prolonged engagement in the observations and interviews, developing trust and spontaneity so that the interactions were embedded with the data (Marshall & Rossman, 1999).

A capacity for transferability of the research outcomes was enhanced by the potential for similar studies to be conducted in a large number of comparable classroom environments. Further research in this area could conceivably include the use of a control group. The parameters of this study, as seen in the research framework (Figure 3.1), describe settings that could be replicated in other school contexts. The dependability construct (Lincoln & Guba, 1985) lay in the ability of
this research to remain flexible enough to cope with contingencies that may have occurred during the program’s implementation, however no changes were necessary.

Validity and trustworthiness were also supported by the input of the participating school staff. The class teacher scrutinised results and provided a critical analysis and appraisal of data; additionally, a learning support teacher was sourced to verify the data. The validity and reliability of the formal components of this study, focusing largely on reading, were addressed by using tests (e.g., Neale Analysis of Reading Ability) that are widely acknowledged as valid instruments.

3.4.2 Ethics

Ethical approval to conduct the study was obtained from the Queensland University of Technology Human Research Ethics Committee (Approval number 3728H). Permission to conduct the study at the school was obtained from the school principal and also from the regional director of education. Informed written consent to participate in the study was obtained from the teachers, the students and parents or guardians. In preparation for establishing approvals, individual meetings were arranged with the parents of each participating student to explain the research program and processes for data collection. Any questions or concerns were addressed informally, and in all cases approval was provided both verbally and in writing. Additionally, the school staff was addressed at staff meetings to provide an overview of the project and an opportunity to voice any concerns that they might have. The principles of research ethics (Burns, 2000) were adhered to and ethics approval was gained before data collection commenced.

3.5 CHAPTER SUMMARY

The research problem, encompassing the cognitive and social-emotional challenges encountered by many students with learning difficulties, has shaped the questions which, supported by the literature, have been central in structuring the research design. The case study design necessitated a multi-method approach including informal and formal data gathering methods. They included interviews with the students, questionnaires, surveys, video, and anecdotal observations. The data collection and analysis methods were designed to address the research questions and provide an evaluation of progressions in self-regulated learning, academic self-efficacy and reading comprehension. All data collection and analysis processes were
formulated to support valid research outcomes, while complying with ethics procedures. The implementation of the COI lessons required considerable planning to conform to the structure of the research model, and to conform to curriculum priorities. An explanation of the lesson planning, topics and implementation is provided in Chapter 4.
Chapter 4: The Community of Inquiry

Chapter 4 focuses on the intervention for children with learning difficulties, the community of inquiry (COI). It outlines the implementation of this social-cognitive teaching method in a Year 4 classroom and explains the procedures involved. Section 4.1 outlines the COI lesson format. Section 4.2 describes a COI lesson during a typical week and the interaction processes integral to the COI. Section 4.3 provides a chapter summary.

4.1 LESSON FORMAT

The COI lesson planning and organisation includes the topics (Section 4.1.1), timetabling and lesson frequency (Section 4.1.2), roles of researcher, teacher and students (Section 4.1.3), and a summary (Section 4.1.4).

4.1.1 The topics

At the beginning of the study, the classroom teacher’s Year 4 curriculum plan, including all key learning areas, was reviewed so that COI topics could be linked to the program. After overviewing the first semester subject areas, the teacher and the researcher compiled a tentative list of relevant topics and leading ideas that would complement the children’s schoolwork.

Once the topics were selected, appropriate literature, stories, plays, or poems were sourced as a stimulus for eliciting questions from the children. Additionally, written activities and thinking games, for example, “Because”, “Guess the Sound” which were sourced from previous COI approaches, were provided to reinforce the concepts and ideas stemming from each topic. The lesson structure follows the format adopted by many schools where the COI has been integrated into the curriculum, adding interest and focus on the ideas emanating from the stimulus stories. The topics for Terms 1 to 4 are provided in Appendix N. Term 1 topics are listed in Table 4.1.
Table 4.1

Term 1 Topics

<table>
<thead>
<tr>
<th>Term</th>
<th>Week</th>
<th>Topic</th>
<th>Narrative</th>
<th>Game</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Real or imaginary?</td>
<td>Lion in the Meadow</td>
<td>Books and</td>
<td>stories</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>Words</td>
<td>Alien under the Stairs</td>
<td>Barrier</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>Clocks and time</td>
<td>Clocks and more Clocks</td>
<td>Curriculum</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>What’s in a name?</td>
<td>Think of a Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>Being responsible</td>
<td>The Sparrow</td>
<td>Communicate</td>
<td>General interest</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>Honesty</td>
<td>The Butter Trap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>What is a mistake?</td>
<td>The Knife</td>
<td>Values</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>Pets and creatures</td>
<td>A Boy for a Pet</td>
<td>Mirror image</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9</td>
<td>Friendships</td>
<td>The Letter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.1.2 Timetabling and lesson format

The timetable for lesson delivery was established early in the year collaboratively with both staff and school administration. The timetable for two COI lessons per week complemented other curriculum areas. The time allocated was 11.30 a.m., on two days of the week with each lesson having a duration of approximately 40 minutes. Each term comprised 10 school weeks and COI lessons were conducted on nine of those weeks, that is, 18 lessons per term or 72 lessons over the four-term year. The lessons took place on Tuesday (Lesson A) and Thursday (Lesson B), both lessons focusing on one topic. Lesson A was the introductory lesson and Lesson B extended the topic, and included follow-up inquiry relating to the questions from lesson A. The title “Talk and Think” was adopted to simplify the purpose and function of the COI lessons for these Year 4 children. The lesson format
implemented was the basic six segment plan, embraced by the Queensland Network for Philosophy in Schools (FAPCA, 2002), as shown in Table 4.2.

Table 4.2

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Segment</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Review the purpose, leading idea, focus skill and blackboard overview</td>
</tr>
<tr>
<td>2</td>
<td>Stimulus</td>
<td>Stimulus story read by teacher or students</td>
</tr>
<tr>
<td>3</td>
<td>Eliciting questions</td>
<td>Students compose thoughtful questions relating to the story</td>
</tr>
<tr>
<td>4</td>
<td>Community of inquiry</td>
<td>The COI is the key segment of the lesson comprising discussion, interaction, questions, responses, deliberation and conceptual understandings</td>
</tr>
<tr>
<td>5</td>
<td>Reinforcement activities</td>
<td>Students divide up into small groups for further discussion on key questions and written activities.</td>
</tr>
<tr>
<td>6</td>
<td>Evaluation</td>
<td>Students evaluated their performance in the small groups</td>
</tr>
</tbody>
</table>

4.1.3 **Roles of the children, researcher and the teacher**

The COI lessons were conducted within a class of 26 Year 4 students, which included the six students participating in the study—Emma, Anna, Brady, Corby, Darren, and Brendan. The researcher, henceforth referred to in this chapter as the facilitator, conducted the lessons. The class teacher recorded observation data. The COI process can be quite dynamic, and the students appeared to enjoy taking charge of the direction each session took. The focus was on the questions that were predominantly posed by the students. Some questions were intermittently offered by the facilitator during the course of the lessons. The energetic interaction and exchange of viewpoints, which occurs in the fourth segment of the lesson format, was essential in building the many skills of COI engagement that potentially lead to
independent reasoning, articulation, and good judgement. However, to sustain the momentum, it was essential for the facilitator to allow the interaction to progress spontaneously, without imposing unnecessary controls. It was important for the students to have ownership of the discourse and remain empowered to lead it on their terms. The six students participating in the research were an integral part of the total class group. During the COI data collecting they were not singled out for any special attention additional to the responses to other class members. They arrived at the lessons and positioned themselves beside their regular classmates. They were not aware or conscious of being research participants at any stage of the program other than the pre-COI data collecting at the beginning of the year. Their participation was spontaneous and unaffected by their involvement in the study. This was imperative for ensuring that there was no impact on the study’s findings and the validity of the study. The facilitator provided the parameters to maintain and chart the course of the discussion. In this way the children felt it was their discussion, and the outcomes were going to be a result of their input and hard work. Although there was some variation in the COI locations, most of the sessions took place in a small room adjacent to the classroom for reasons relating to floor space and convenience.

4.1.4 Summary

The timetable for the COI lessons had to complement class planning and integrate with lessons by all staff. The class profile and Year 4 curriculum provided information to frame the rationale for selecting topics. Once the lesson format and topics were in place, then each individual lesson, comprising six segments, could be planned. The roles of both facilitator, and students played an essential role in the lesson. The facilitator’s role was one of providing an environment that empowered the students to play their part in taking ownership of the discussions. The class teacher recorded ongoing observations.

4.2 COMMUNITY OF INQUIRY IMPLEMENTATION

This section overviews the delivery of one typical week during the study. It describes the lesson format for that week (Section 4.2.1) and expands on the student responses to the program (Section 4.2.2). The skill development observed during the first semester is explained (Section 4.2.3) and a summary is provided (Section 4.2.4).
4.2.1 The lessons

The following example of a typical week encompasses lesson A and lesson B, and focuses on the topic “Senses”. It took place at the beginning of Term 4, when the children had become accustomed to the routine and felt comfortable with the interactive inquiry procedure. At 11.30 a.m. the 26 students in the class were lined up at the door in anticipation of the task ahead. The students were familiar with the lesson format, and took their positions in the circle ready to talk and think (Figure 4.1).

![Figure 4.1. Room setting arranged for the COI lesson.](image)

Each lesson had six segments, the primary and most essential segment being the COI discussion (see Section 4.1.2).

**Lesson A**

The lesson introduction involved the facilitator explaining the purpose of the lesson. This required interacting briefly with the class by discussing the leading idea and the focus skill then drawing attention to the blackboard overview which listed the aims of the lesson relating to the topic *Senses*.

The aims included reinforcing the difference between simple questions (textual or informational) and thinking questions (intellectual). Examples included the basic question “What are some of our senses?” and a thought-provoking question, “Do plants have senses?” which led to a free-ranging discussion about the capacity of plants as well as animals to take in sensory information about their environment. The
leading ideas included the importance of our senses in our lives and their capacity for giving us the ability to do and achieve things. The focus skill for this week centred on developing analogies. This skill was explained and examples were discussed. The blackboard concepts were discussed and the main ideas for the lesson were described briefly by the facilitator, with reference to the blackboard depictions and story (Appendix O). The blackboard was prepared to both inform and arouse interest (Figure 4.2).

![Figure 4.2. Blackboard showing photographs from the stimulus narrative and main ideas.](image)

**Stimulus**

The stimulus narrative for this lesson was “Dreaming in words” (Bilbrough, 2003). Stories are frequently read to, and by, children of this age group during the week. The COI stimulus stories became a part of the story reading section of the class program. The story was read to the class by the facilitator and in some of the lessons it could be read by the students as shared reading. As they sat in the circle formation, they could also view blown-up pictures relating to the story that were taped to the blackboard. The story concerned a primary school student named “Dylan” who had been blind from birth. Regardless of his disability he led an active life. He rode horses, went skiing, played rugby, and got up each day at 6.00 a.m. to play the piano. He had a huge cat called “Bubbles” and had never watched a movie or television program in his life. Dylan had no pictures in his dreams, only
conversations. The story described his daily fun-filled life at school and home, and his love of writing stories. Where did he get the ideas for his stories? He read books written in braille, listened to taped stories, and used a “Talking Book” machine (Figure 4.3).

Figure 4.3. Stimulus story about Dylan who was blind.

Having listened to the story, the students initiated a short verbal review of the most interesting aspects of it. Individual students raised ideas about the importance of our sense of sight and questioned how Dylan could be so happy when he was blind. The focus was on this blind schoolboy’s capacity to have fun and enjoy life regardless of his disability.

Eliciting questions

The children were asked to recall any part of the story that they found puzzling, strange, or unusual. They put these thoughts in question form and one or two questions were elicited from each student. They wrote their questions on the cards provided, along with their names. Some of the questions were shared and discussed to select the two or three issues that they collectively wished to explore. The
remaining questions were collated for subsequent grouping and display on the blackboard for lesson B (Figure 4.4).

![Image](image.png)

*Figure 4.4. The students wrote their questions on the card provided.*

Examples of student-generated questions included:

- What is our most important sense?
- If a person can’t see is some of his freedom taken away?
- Is breathing one of our senses?

Teacher-generated open questions extended reasoning skills and the opportunity to construct explanations. Examples for this topic included:

- A person blind since birth still dreams. Are they “picture” dreams?
- Are dog senses the same as human senses?
- Do trees have senses?

**Community of inquiry**

The COI interaction was initiated by focusing on the student question or questions generating the most interest decided by consensus. As facilitator, the researcher enhanced student interaction by providing positive feedback, making sure all children had an opportunity to contribute but constraining drawn-out story-telling. Guidance and encouragement nurtured a flow of ideas that led to a consensus, conclusion, or common understanding. It was important that the facilitator did not over-direct proceedings or impose too many teacher-generated ideas. The children were always encouraged to adhere to the essential rules—listen carefully, wait for your turn, and respect the views of others even though you may disagree.
An example of the interaction focusing on the question, “How can a person who has been blind all his life think up a story?”, drew the following responses:

Student:  “Well he (the boy in the story) could still think about things, therefore he can work out a story."

Student:  “I think he is still learning too and so he must be seeing things in his mind?"

Student:  “Well it depends on how much he wants to write stories. Even though he’s blind he can still imagine what things are like for other people and think about what they do.”

Student:  “I think that because he is blind he probably thinks very hard about all the things that are around him, and the pictures he makes in his mind can become stories.”

Facilitator:  “Would his imagination be as good as your imagination?”

This line of argument, exploring the many issues relating to blindness, was encouraged until there was a general understanding. However, the key elements of empowered speaking within the group, reflective listening, making connections, exploring concepts, and sharing ideas, took precedence over a conclusive outcome. In addition to the whole-class COI setting, a format that could be described as “the fishbowl”, was adopted intermittently. A small group sat in the centre of the wider assembly and took over the discussion. This format provided an exemplar to the class and was also used to give the less vocal students an enhanced opportunity to participate (Figure 4.5).
Reinforcement activities

At the conclusion of the COI discussion, the reinforcement activities were completed in small groups. An enlarged copy of the activities was taped to the blackboard then discussed to ensure the students understood the procedure. Students then moved into their groups taking their individual folders containing the activity sheet and a pencil. The groups had been strategically arranged to allow for appropriate monitoring of the six students in the study and socially to maximise the potential for interaction. The reinforcement session comprised three relevant thought-provoking questions (e.g., Do plants feel pain?) to be discussed within the small group of four to five students. This activity was followed by the written activity, which could be approached on a “shared ideas” basis. Figure 4.6 illustrates one section of the reinforcement activities.
Evaluation

The evaluation completed the lesson. The students assessed their performance verbally in the small group locations using the evaluation questions:

- How well did I listen?
- Did I ask Thinking questions?
- Did I respect the comments made by the others in the group?

This evaluation concluded Lesson A.

Lesson B

Lesson B extended the topic *Senses* by reinforcing the ideas from Lesson A and providing a forum for student responses to the questions collated from lesson A. The format for both lessons remained the same, as shown in Table 4.2 (see Section 4.1.2). The introduction to Lesson B comprised a review of the topic *Senses* and revisiting the leading ideas arising from the first lesson, namely, the importance of our senses and their influence on our freedom to lead an interesting life.
**Stimulus**

As the class was familiar with the theme of this week’s discussion, there was less need for stimulation. The stimulus for lesson B included a recall of “Dreaming in words” from several students. Additionally a short story read by the facilitator, “Four Senses” (McMahon, 2005), reinforced the importance of our sense of sight. In this case, a blind dog adapted to life with the help of its owner (Figure 4.7).

![Four Senses](image)

*Figure 4.7. Stimulus story relating to the sense of sight.*

**Eliciting questions**

This follow-up lesson had a strong focus on question responses and discussion. The students’ questions collated from lesson A formed the key component for revisiting the Senses theme. The questions from individual students had been recorded on the blackboard with the names of each contributor (Figure 4.8).
Figure 4.8. Student questions listed on the blackboard for class consideration.

These questions were read aloud by the individual contributors, and discussed in terms of relevance and interest value. The most popular questions were selected for inquiry on the basis of a vote or consensus. Some of the student’s questions from lesson A are listed below.

- What is our most important and least important sense?
- How can a blind person think up a story?
- If a person can’t see, is their freedom taken away?
- How do people learn to live happily without one of their senses?
- Could animals still live happily without their sense of sight?
- How free would you be if you lost all five senses?
- Do our senses help us to remember?

The questions for discussion in the COI were written on the blackboard.
**Community of inquiry**

The discussion was again initiated by having the students address the questions that they felt had potential for thoughtful discussion. These questions fell into areas that were of interest and relevance for living. The session focused on the restrictions on freedom when one or more of our senses is taken away. The discussion was enthusiastic and the children concluded that, if people are blind or deaf, they can still lead an active and fulfilling life. The questions stimulated a range of student responses, as shown by the following Lesson B interaction, taken from video footage, relating to having a disability:

- “I think that if you can’t see or if you are deaf, you can still have a good life and be happy.”
- “Blind people can still read (braille) and they can get about with sticks and guide dogs.”
- “Although they can’t see things that are real, that doesn’t mean their minds aren’t working well. They just have difficulty reading.”
- “I think they can dream and see pictures in their dreams. Even if you are not blind you still have your eyes closed. They can use their imagination and make pictures in their mind.”
- “Animals have senses and feelings and enjoy life?”
- “Animals have a lot of fun; even the blind dog in the story had fun.”
- “Plants can’t see, but they have senses?”
- “They grow as you water them and I think trees have feelings. If you cut a tree and stuff [sap] comes out, you have hurt it and it may think it’s going to die.”

Not all of the questions were followed up at length, as the momentum and direction of the interaction had no set plan. The interest in facets of the discussion guided the direction of conversation and was encouraged until there was a general understanding, or continued exploration was curtailed by the time constraints.

**Reinforcement activity**

As in Lesson A, the reinforcement activities were completed in small groups. An enlarged copy of the activities, taped to the blackboard, was discussed and a short time allowed for questions or comments. Students then moved into their groups,
taking their individual folders containing the activity sheet and a pencil. As before, the reinforcement session focused on open-ended questions, which were discussed within the small groups of four or five students. It included written activities which could be responded to as a group by sharing ideas. Figure 4.9 focuses on Freedom, an extension of the topic *Senses*.

<table>
<thead>
<tr>
<th>Which of these have freedom?</th>
<th>A LOT</th>
<th>QUITE A BIT</th>
<th>NOT VERY MUCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A statue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>An elephant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>A spider</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A tree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Someone who is disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>A fire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>A yacht</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>A river</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Clouds</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 4.9. Thinking activity relating to freedom.*

The students then assessed their performance in their small group locations.

- How well did we stay with the discussion?
- How well did I listen?
- Did I ask “thinking” questions?
- Did I refer to the comments of others?

The researcher and teacher used the following questions to evaluate individual and class changes in thinking and speaking skills.

- Were they critical?
- Did they argue the case?
• Did they address other children?
• Did they form a particular point of view?
• Were they willing to change their minds?

The evaluations were recorded for inclusion in student observation records, and for teacher and researcher discussion.

4.2.2 Monitoring student behaviour and engagement in the program

Some children showed intellectual engagement from the outset of the program early in the year. Although this engagement was beneficial in terms of role-modelling to the larger group, the discussion skills of the six study participants were slow to develop as evidenced by continuing reticence. A few children started out quite negatively and were a disruptive influence on the COI setting. Two of the students in the study group were among the disruptive element in the class. During Term 1, steps were taken to address the influence of the children with behaviour problems. Strategically seating these children in the discussion circle and engaging them in the interaction by encouraging their peers to request a response, helped to keep their minds centred on the questions. However, the negative behaviour of the two students in the study group was disconcerting during the early part of the study.

In Term 2, there was a positive development. The enthusiasm and involvement with the class as a whole, seemed to have a positive effect on the disruptive students, indicated by a gradual change toward increased cooperation. Observations suggested that they seemed to appreciate the satisfaction and benefits of being a collaborative participant. This change in attitude was not a sudden transformation but a gradual, uneven shift toward increasing interest and active, more confident involvement in the discussions. The peer influence and role-modelling seemed to have provided more respect and tolerance for the ideas of others. Their capacity for listening reflectively and responding in a reasoned manner had increased. A rewarding by-product was the improved attitude and cooperative participation of the two participants who initially had behaviour issues.

4.2.3 Monitoring skill development

The skill level of many in the participant group did not change appreciably during term one. The workload of sustaining the dialogue momentum was left to the already
competent few, combined with substantial input from the facilitator to navigate an appropriate path. Toward the end of term two, and more noticeably in term three, the skill level relating to communicating interactively and exchanging ideas had increased for the majority in the class. There were three basic rules adopted for every lesson; listen carefully at all times, respect the views of others, and wait for your turn to speak—do not cut in. These rules were reinforced regularly and observations suggested that they encouraged three participatory skills: (1) reflective listening; (2) analysis of the ideas contributed by one’s peers; and (3) building on the concepts and arguments within the interaction.

These participatory skills, observed and documented at every lesson by the researcher, laid the foundation for building on the skills of critical and creative thinking. As terms three and four progressed, students in the regular class group learned to formulate more stimulating questions. The students’ own questions, along with teacher-generated supplementary questions, encouraged creativity and reasoning. Students began to use the ideas of others as building blocks in developing an argument to support their own ideas. An entry to the dialogue might begin with “I agree with what Corey said but I also think that…” or, “I disagree with Brody because…” Their reference to the views of the other children stimulated the skill of critical and more independent thinking. The acceptance of their beliefs by others, even though they sometimes changed their mind, appeared to nurture confidence, as shown in video replays.

The class in general, including all but one of the participant students, seemed to move toward higher order thinking. This enhanced thinking was indicated by the recorded interpretations of changing reasoning abilities. Other key skills that were nurtured during program included “giving examples”, “constructive agreement or disagreement”, “analogies”, “explaining”, “problem seeking”, “deciding what is important”, and “offering alternatives”. Anecdotal comments, collaboratively reviewed video data relating to student responses, and changes in the skills of the study participants, were recorded throughout the COI implementation.

4.2.4 Summary

During the nine months of the COI implementation, 36 topics were addressed, with one topic being addressed each week. The lesson format required two lessons per
week to include each topic and these two were labelled A and B in the planning. The topic *Senses* occurred in early term four, at a point in time when the children had achieved a skill level of self-sustained dialogue. The two lessons described in Section 4.2 demonstrate the format and procedures applied in their implementation. Behavioural changes and engagement in the program, including the influence that the more competent students had on their less competent peers, were evaluated continuously. This evaluation was relevant when monitoring changes in the participant group. Skill development was monitored within the whole group with a focus on student interaction and exchanging of ideas in response to the questions.

### 4.3 CHAPTER SUMMARY

The COI implementation, and each of the seventy-two lessons in the study, required considerable planning to meet the requirements of the school and curriculum. The scheduling of lessons had to complement classroom planning while the rationale for selecting topics needed to comply with the Year 4 curriculum content. Each individual lesson comprised six segments including an introduction, the stimulus narrative, eliciting questions, discussion, reinforcement activity, and evaluation. Over the nine-months duration of the COI, one topic was covered each week, requiring two lessons. Basic rules were adopted for every lesson, for example, listen carefully at all times, respect the views of others and wait for your turn to speak. The lesson design provided opportunities for all students to contribute, ensuring that the children with learning difficulties were engaged in a variety of ways. This design also set up the infrastructure for the data collection.
Chapter 5: Results for Self-Regulated Learning

The central question in the study, “What impact does participating in the community of inquiry (COI) process have on students with learning difficulties?” was informed by three sub-questions related to: (a) self-regulated learning (SRL), (b) academic self-efficacy (ASE), and (c) reading comprehension. This chapter focuses on the results for the first sub-question, “What impact does the COI appear to have on students’ self-regulated learning skills?” Results for the second and third sub-questions are presented in Chapters 6 and 7 respectively.

The participants’ development of self-regulated learning over the course of the COI was examined using three pre- and post-COI measures (Section 3.2.2). The primary measure (Appendix A), the semi-structured interview (SSI), examined the four phases of SRL and their essential components. The four phases of SRL are forethought, control, monitoring, and reflection. Results from the SSI were supplemented by data from the think-aloud analysis (TAA) and the Collaborative Observations Synopsis (COS).

Results for each of the four phases of self-regulated learning will be discussed in relation to two representative students. These will be the two participants who demonstrated the highest progression and the lowest progression in each of the four phases of SRL. Responses in the SSI were evaluated from one to five (see Section 3.3.2) according to the level of aptitude and the analysis made on the changes in each component across the duration of the study. Each student’s level of development was described as nil, minimal, moderate, or substantial, according to the number of progressions from the pre-COI interview to the post-COI interview, as shown in Table 5.1.
Table 5.1

*Description of Levels of Development*

<table>
<thead>
<tr>
<th>Level of development</th>
<th>Number of progressions</th>
</tr>
</thead>
<tbody>
<tr>
<td>substantial change;</td>
<td>3 progressions</td>
</tr>
<tr>
<td>moderate change</td>
<td>2 progressions</td>
</tr>
<tr>
<td>minimum change</td>
<td>1 progression</td>
</tr>
<tr>
<td>no change</td>
<td>0 progressions</td>
</tr>
</tbody>
</table>

In each of the four SRL phases, two measures were utilised for collecting data, a primary and a secondary measure. The four SRL phases, their associated components, and the relevant measures used, are shown on Table 5.2.

Table 5.2

*Examination of Self-regulated Learning*

<table>
<thead>
<tr>
<th>Section</th>
<th>phases</th>
<th>Components</th>
<th>Primary measure</th>
<th>Secondary measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Forethought</td>
<td>planning interest efficacy goal orientation</td>
<td>SSI</td>
<td>TAA</td>
</tr>
<tr>
<td>5.2</td>
<td>Control</td>
<td>recall strategy selection-adaption locus of control persistence</td>
<td>SSI</td>
<td>COS</td>
</tr>
<tr>
<td>5.3</td>
<td>Monitoring</td>
<td>motivation metacognition text inferences need for help self-observation self-correcting</td>
<td>SSI</td>
<td>TAA</td>
</tr>
<tr>
<td>5.4</td>
<td>Reflection</td>
<td>evaluation self-judgement self-instruction attribution choice behaviours</td>
<td>SSI</td>
<td>COS</td>
</tr>
</tbody>
</table>

*Note.* SSI = Semi-structured Interview; TAA = Think-aloud Analysis; COS=Collaborative Observations Synopsis
The following sections address each phase of SRL. The phases include forethought (Section 5.1), control (Section 5.2), monitoring (Section 5.3), and reflection (Section 5.4). The chapter concludes with a summary (Section 5.5).

5.1 RESULTS FOR FORETHOUGHT

Forethought has direct implications for a child’s metacognition and ability to become a self-regulated learner. The four components of forethought are planning, interest, efficacy, and goal orientation. With regard to changes in the students’ capacity for forethought over the duration of the COI, an initial examination was made of pre- and post-COI responses on the SSI. Responses to each forethought component were evaluated on the five-point scale to ascertain the range of pre- to post-COI progressions across the six participating students (Table 5.3). This examination of the ratings facilitated the selection of the student who had made the greatest progress, and the student who had made the least progress, across the four components of forethought. Results for the remaining four focus students lie within this range of outcomes, as shown in Table 5.3.

Table 5.3
Pre- and Post-COI Scores and Changes for Forethought

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-COI score</th>
<th>Post-COI score</th>
<th>Post-COI score minus pre-COI score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corby</td>
<td>7</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Brendan</td>
<td>6</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Anna</td>
<td>7</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Emma</td>
<td>9</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Brady</td>
<td>8</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Darren</td>
<td>7</td>
<td>12</td>
<td>5</td>
</tr>
</tbody>
</table>

Corby and Darren were selected as representing the highest and lowest changes in achievement levels for the six participants on forethought. Corby and Darren’s results are compared in order to substantiate the impact of the COI on self-regulated learning. The level of impact will be described as nil, minimal, moderate, or substantial development, according to the number of responses showing positive growth in each of the forethought components. Corby’s results are presented in
Section 5.1.1, while Darren’s results are presented in Section 5.1.2. To conclude, a summary of the impact of the COI on forethought is presented in Section 5.1.3.

5.1.1 Corby

Corby’s results for forethought are presented using the primary measure, the SSI, and the secondary measure, the TAA. The SSI included four questions, one for each of the four components of forethought. Corby’s pre- and post-COI responses are provided Table 5.4.

Table 5.4

Corby’s Semi-structured Interview Responses for Forethought

<table>
<thead>
<tr>
<th>Forethought component</th>
<th>SSI focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>When you are starting some new work, what do you do or think about to help you get started?</td>
<td>“I like to have a drink to get my mind working.”</td>
<td>“I do my name, date, read the question, and sharpen my pencil.”</td>
</tr>
<tr>
<td>Interest</td>
<td>What are some of the interesting things about schoolwork that help you to enjoy it?</td>
<td>“I like learning.”</td>
<td>“Learning, maths, getting help from my friends, doing things different ways. It’s not all work, there are fun things like reading and using different voices for different characters. ‘Talk and Think’ (COI) helps me use my brain.”</td>
</tr>
<tr>
<td>Efficacy</td>
<td>If you are asked to do something that’s really difficult, how do you feel?</td>
<td>“It makes me a bit nervous.”</td>
<td>“A bit nervous and sometimes confused but I like to give it a go and get it done. You don’t know if you are good at something or not good so you have to give it a go to see if you are good.”</td>
</tr>
<tr>
<td>Goal orientation</td>
<td>As you start on a task, do you like to know why you are doing it?</td>
<td>“I know why I’m doing it, it’s to have fun. Yes I like to know.”</td>
<td>“Yes I like to know because it’s learning and thinking.”</td>
</tr>
</tbody>
</table>
The key elements of Corby’s forethought development were as follows.

Planning: Corby’s pre-COI response indicated that he had little capacity for planning. In contrast, Corby’s post-COI response revealed an improved understanding of how to prepare himself for a new task. The collaborative analysis of Corby’s responses on the five-point evaluation scale, showed a post-COI increase from one (pre-COI) to three (post-COI) therefore a moderate increase.

Interest: Before beginning the COI, Corby recounted no areas of interest other than learning. In contrast, subsequent to the COI, Corby was able to express with enthusiasm several positive aspects of his schoolwork—maths, reading, and speaking, showing a general improvement in interest. The collaborative analysis of Corby’s responses indicated an increase from three (pre-COI) to four (post-COI), a minimal increase, although he maintained a satisfactory level of interest overall.

Efficacy: In his pre-COI response, Corby indicated that coping with the difficult aspects of schoolwork was worrying for him. By comparison his post-COI response, although still suggesting apprehension, demonstrated an increased willingness to persist when the work was demanding. The collaborative analysis of Corby’s responses showed an increase from two (pre-COI) to five (post-COI), suggesting a substantial positive change.

Goal Orientation: Both pre- and post-COI, Corby expressed a desire to understand the goals associated with school activities. There was little change, however, in his post-COI response.

In summary, Corby’s planning, interest, and efficacy strengthened, while his goal orientation remained unchanged. The development of Corby’s capacity for forethought appears to have increased moderately. The collaborative analysis of Corby’s responses showed an increase from one (pre-COI) to three (post-COI), indicating a moderate increase in goal orientation. Implementation of the secondary measure focused predominantly on forethought rather than the individual components. The first segment of the TAA provided the forethought data. Corby was asked, “How do you decide whether this will be a good story?” His responses are...
compared using two stories, “The Greedy Dog and the Bone” and “Great Lion and Tiny Mouse”.

Pre-COI Corby’s response was quite brief—I look through the book a bit and look at the pictures a bit.

Post-COI, Corby was more expansive—I look at the pictures and read through it, see if it’s a short book, how much writing in it, and read through it to get the story in my head. The front cover and the pictures tell what the main characters are then I look at the title and if I don’t really like it I would still have a read of it. If the words are too hard I’ll still make up my mind about it being an easy or hard book – decide on the level of reading – look at the blurb.

Although in his pre-COI response Corby showed some interest in previewing the book, he stated few planning strategies. In contrast, Corby’s post-COI response included considerably more anticipation of the story events. In evaluating the story, he examined the cover, and demonstrated strategies for contemplating the book in terms of his needs. His response showed an enhanced capacity for forethought, which appears to have developed substantially. His articulation during the sessions also improved. In summary, across both measures, the SSI and TAA, Corby’s development in forethought appears to be moderate to substantial. This development suggests a positive impact on his competence as a self-regulated learner.

5.1.2 Darren

Darren’s results for forethought are reviewed by the primary measure, the SSI and the secondary measure, the TAA. His pre- and post-COI responses to the four components of forethought are presented in Table 5.5.
The key elements of Darren’s responses for forethought were as follows.

Planning: Darren’s pre-COI response disclosed no planning strategies. By comparison, his post-COI response was more descriptive and implied that his planning abilities had increased. The collaborative analysis of Darren’s responses on the five-point evaluation scale, showed a moderate post-COI increase from one (pre-COI) to three (post-COI).

Interest: In the pre-COI interview Darren said little but expressed a positive attitude. In the post-COI interview he showed greater interest and he was more specific about what he enjoyed, suggesting a small increase in the value that he placed on his school activities. The collaborative analysis of Darren’s responses showed a moderate post-COI increase from one (pre-COI) to three (post-COI).

Efficacy: Darren’s pre-COI response was once again positive. His later, post-COI response, indicated no change in terms of efficacy, while his confidence appeared to have decreased. The collaborative analysis of Darren’s responses on the five-point evaluation scale showed no change.

Table 5.5

Darren’s Semi-structured Interview Responses for Forethought

<table>
<thead>
<tr>
<th>Forethought component</th>
<th>Focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>When you are starting some new work, what do you do or think about to help you get started?</td>
<td>“I don’t know.”</td>
<td>“I get my pencils, sharpeners, colours (ready). I think about having a good day.”</td>
</tr>
<tr>
<td>Interest</td>
<td>What are some of the interesting things about schoolwork that help you to enjoy it?</td>
<td>“Just doing some work – just doing it is fun.”</td>
<td>“Learning, playing, maths, art, trying to behave, toys and my friends.”</td>
</tr>
<tr>
<td>Efficacy</td>
<td>If you are asked to do something that’s really difficult, how do you feel?</td>
<td>“Happy because I get to learn new things.”</td>
<td>“I’m worried about doing something wrong but I try before I ask for help.”</td>
</tr>
<tr>
<td>Goal orientation</td>
<td>As you start on a task, do you like to know why you are doing it?</td>
<td>“I don’t worry about things like that.”</td>
<td>“Not sure, I just like it and thinking and listening to stories.”</td>
</tr>
</tbody>
</table>
Goal orientation: Pre-COI Darren demonstrated no awareness of goal-setting. This skill level remained unchanged in his post-COI response. The collaborative analysis showed a post-COI increase from one (pre-COI) to two (post-COI), suggesting minimal evidence of improved goal orientation.

In summary, Darren’s planning and interest show minimal to moderate development, while his efficacy, although relatively positive, is unchanged. Goal orientation is also unchanged, therefore Darren’s capacity for forethought, during the COI, appears to show nil to minimal development. The second measure indicated a more positive outcome. Darren’s responses relating to forethought, for both the pre- and post-COI story-book appraisals, were brief. Commenting on “The Greedy Dog and the Bone”,

Pre-COI Darren’s response indicated some anticipation— I think it looks like an interesting story.

Post-COI responding to “Great Lion and Tiny Mouse”, Darren showed some ability to think ahead—I read the story a bit and the pictures sometimes. If it’s got cool pictures it could be a good book.

In his pre-COI response Darren expressed some initiative when pre-viewing the cover to evaluate the first story. Post-COI, Darren’s response was slightly more expansive and he expressed interest through evaluating the story using the illustrations. His post-COI response indicates a minimal degree of forethought development. Across both measures, the SSI and the TAA, Darren’s development in forethought appears to be minimal.

5.1.3 Summary
Corby and Darren’s development in forethought, the first component of SRL, was assessed by means of two measures, the SSI and TAA. Corby and Darren were selected because they represent the extremes of the progression levels for the six participants. The results determined by the collaborative analysis of responses on the five-point evaluation scale were positive across the cohort, ranging from minimum to moderate development, with some results in the TAA showing substantial improvement. This outcome indicates a generally positive level of growth in forethought for the six students (Table 5.3), which shows the scores generally inclining toward the higher aspect of the results range.
5.2 RESULTS FOR CONTROL

Students with learning difficulties typically have little confidence in their ability to control learning. Five components play a part in the control phase of SRL (Pintrich, 2000). They are recall, strategy selection, strategy adaption, locus of control, and persistence. Two measures were used to examine changes in the students’ capacity for control. An initial examination was made of pre- and post-COI results on the primary measure, the SSI, and evaluated on a five-point scale to ascertain the range of pre- to post-COI progressions across the six participating students (Table 5.6). This examination indicated that the student demonstrating the highest growth in control was Anna, while the student who demonstrated the lowest growth was Brendan. Results for the remaining four focus students lie at or within this range of outcomes (Table 5.6).

Table 5.6
Pre- and Post-COI Scores and Changes for Control

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-score</th>
<th>Post-score</th>
<th>Post-COI score minus pre-COI score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna</td>
<td>9</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Brady</td>
<td>11</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>Corby</td>
<td>9</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Emma</td>
<td>9</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Darren</td>
<td>10</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Brendan</td>
<td>7</td>
<td>12</td>
<td>5</td>
</tr>
</tbody>
</table>

Anna’s results are presented in Section 5.2.1, while Brendan’s results are presented in Section 5.2.2. To conclude, a summary of the impact of the COI on forethought is presented in Section 5.2.3.

5.2.1 Anna

Anna’s results for control are reviewed on the primary measure, the SSI, and the secondary measure, the COS. Anna’s pre- and post-COI responses are provided in Table 5.7.
Table 5.7

Anna’s Pre- and Post-COI Responses on the SSI for Control

<table>
<thead>
<tr>
<th>Control component</th>
<th>SSI focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall</td>
<td>When you are learning new work, do you remember what you have learnt before?</td>
<td>“I use what I have learned from another school.”</td>
<td>“I remember things I have learnt in Yr. 2 at Seaforth (previous school) how to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>spell because using “Crunchy Apples” and rhymes – I think about my work more.”</td>
</tr>
<tr>
<td>Strategy selection</td>
<td>How do you decide the best way to do a difficult task?</td>
<td>“I don’t know.”</td>
<td>“I choose my favourite (method) and I take the one I like.”</td>
</tr>
<tr>
<td>Strategy adaption</td>
<td>When you get stuck, do you go back and try a different way?</td>
<td>“I will try it another way first before I get help.”</td>
<td>“Yes I think so but I’m not sure. You learn more if you try another way and you’ll</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>be proud of yourself.”</td>
</tr>
<tr>
<td>Locus of control</td>
<td>Do you like to do a task on your own or do you like to get help along the way?</td>
<td>“I get help, I like getting help.”</td>
<td>“I prefer to do it on my own and later ask the teacher if it’s really, really hard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– but I like to do it myself.”</td>
</tr>
<tr>
<td>Persistence</td>
<td>If a problem is not working out, do you like to keep on trying?</td>
<td>“Not sure.”</td>
<td>“Yes sometimes – I like to do it on my own.”</td>
</tr>
</tbody>
</table>

The key elements of Anna’s development in control were as follows.

Recall: Anna’s pre-COI response indicated that some recall effort was being attempted. Her post-COI response showed a minimally higher level of recall and she described specific recalled strategies. The collaborative analysis on the five-point evaluation scale showed an increase from three (pre-COI) to four (post-COI), indicating minimal change but, nevertheless, Anna is maintaining a satisfactory recall level.

Strategy selection: Pre-COI Anna showed no awareness of the use of strategies, whereas her post-COI response demonstrated some understanding of the need to use strategies for new tasks. The collaborative analysis showed a post-COI increase from
two (pre-COI) to four (post-COI), suggesting a moderate positive change in strategy selection.

Strategy adaption: In the pre-COI interview Anna showed some aptitude for varying strategy use. Post-COI her comments additionally indicated an understanding of why it is important to try different approaches. The collaborative analysis indicated an increase from one (pre-COI) to three (post-COI), suggesting moderate evidence of improving strategy adaption.

Locus of control: In the pre-COI interview Anna relied on assistance with her work, whereas in her post-COI response she expressed a desire to make an independent effort and to be in charge of her learning. The collaborative analysis showed a post-COI increase from one (pre-COI) to four, suggesting substantial gain in locus of control.

Persistence: There was no indication of persistence in Anna’s pre-COI response. Her post-COI revealed a resolve to complete her work independently. The collaborative analysis indicates a post-COI increase from two (pre-COI) to four (post-COI), suggesting a moderate increase in persistence.

Thus, overall, Anna’s post-COI responses indicate an adjustment from a minimal demonstration of control in the pre-COI interview to a more confident attitude toward her work and a desire to be more in charge of her learning. This result indicated a moderate increase in personal control of her learning. The report from the second measure, the COS, also suggests that Anna’s capacity for taking control of her learning has changed in a positive direction.

Pre-COI: Anna appears to have difficulty remembering previously learned skills, while strategy selection and adaption is minimal. Anna demonstrates a minimal level of internal locus of control, relying on external factors. Her persistence is consistent.

Post-COI: Anna appears to have less difficulty recalling previously learned skills. Strategy selection is evident and she often gives alternative approaches a try. She is now demonstrating a satisfactory internal locus of control and tries hard in all areas in a most consistent manner.

These pre- and post-COI observations support the SSI results, indicating that Anna has an enhanced aptitude for being in charge of her schoolwork. Taken
together, the two measures suggest a consistently moderate development in Anna’s confidence in taking control of her own learning.

### 5.2.2 Brendan

Brendan’s pre- and post-COI responses to the five components of control are presented in Table 5.8.

Table 5.8

*Brendan’s Pre- and Post-COI Responses on the SSI for Control*

<table>
<thead>
<tr>
<th>Control components</th>
<th>SSI focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall</td>
<td>When you are learning new work, do you remember what you have learnt before, to help you?</td>
<td>“No - I’m sure I don’t.”</td>
<td>“Not sure about that.”</td>
</tr>
<tr>
<td>Strategy selection</td>
<td>How do you decide the best way to do a difficult task?</td>
<td>“I don’t know.”</td>
<td>“I reckon it’s kind of easy. You just give it a go – try to get it.”</td>
</tr>
<tr>
<td>Strategy adaption</td>
<td>When you get stuck, do you go back and try a different way?</td>
<td>“No I just try again.”</td>
<td>“Do it on my own or with a friend who helps me.”</td>
</tr>
<tr>
<td>Locus of control</td>
<td>Do you like to do a task on your own or do you like to get help along the way?</td>
<td>“I like to do it on my own the first time, then I ask for help.”</td>
<td>“Try at first then work with a friend who helps me, then I help him. If he gets stuck I help him and he helps me when I’m stuck.”</td>
</tr>
<tr>
<td>Persistence</td>
<td>If a problem is not working out, do you like to keep on trying?</td>
<td>“I like to keep trying.”</td>
<td>“Yes or just go past it (the difficult part) do the rest and then come back to the hard part.”</td>
</tr>
</tbody>
</table>

The key elements of Brendan’s responses for control were as follows.

Recall: Brendan’s pre-COI response indicated that no recall effort was being attempted. His post-COI response also showed no indication of change.

Strategy selection: Brendan’s pre-COI response showed no awareness of how to select strategies. His post-COI response, although not showing understanding of strategy use, was more positive in that he was willing to try. The collaborative
analysis, on the five-point evaluation scale, showed an increase from one (pre-COI) to two (post-COI), suggesting minimal evidence of increased strategy selection.

Strategy adaption: Pre-COI Brendan had no understanding of using different ways to problem solve other than trying again. This perception was still evident in the post-COI interview. The collaborative analysis showed a post-COI increase from one (pre-COI) to two (post-COI), suggesting minimal evidence of strategy adaption.

Locus of control: In the pre-COI interview Brendan expressed a need for independence coupled with assistance. Post-COI, his locus of control was more internal. Hence, he demonstrated a greater resolve to be in charge but with peer assistance. The collaborative analysis showed an increase from two (pre-COI) to three (post-COI), suggesting only a minimal positive change in locus of control.

Persistence: There was some indication of persistence in Brendan’s pre-COI response. His post-COI response pointed to increased persistence by providing an example of how he coped with problems in his work: “I leave the hard part and come back to it later”. The collaborative analysis showed a post-COI increase from two (pre-COI) to four (post-COI), suggesting a moderate increase in persistence.

In summary of his responses, Brendan is showing some development, particularly in the locus of control component. He is also exhibiting more persistence. Brendan’s sense of control over his learning seems to have advanced to a minimal extent. The secondary measure, the COS, indicates a similar minimal level of growth in control.

Pre-COI: Brendan’s skill recall is limited, as is his inclination to retrieve known strategies and apply them to current problems. Strategy recall is also minimal and he tends to ask for help rather than persevere. Brendan does not display control in most settings; however, he persists in some areas of his work.

Post-COI: Brendan’s recall, principally in reading, has increased, while strategy recall and selection is still minimal. Brendan asks for help rather than testing other methods; however, he is showing greater maturity and self-control, and persists more in most areas of his work. These pre- and post-COI observations generally align with the SSI results indicating that Brendan has developed some sense of control over his learning, with an improvement in recall and persistence. Taken
together, the two measures suggest a positive change in control but one that is a minimal.

5.2.3 Summary

Anna and Brendan’s development in control was assessed by means of two measures, the SSI and the COS. Taken together, the results for the two students across the two measures indicated the following post-COI changes. Across both measures, Anna shows a consistently moderate development in control while Brendan’s development was positive but minimal. The remaining four participating students’ progressions in control will therefore lie between Brendan’s minimal development and Anna’s moderate development. However the changes for these four students tended toward the higher level of the outcomes spectrum (Table 5.6).

5.3 RESULTS FOR MONITORING

Ability to monitor the learning processes is a key attribute of self-regulated learners and is often absent in children with learning difficulties. The monitoring phase of SRL has six components—metacognitive awareness, text inferences, self-observation, self-correcting, need of assistance, and motivation. Two measures were used to examine changes in the students’ capacity for monitoring. An initial five-point scale assessment was made of pre- and post-COI results on the primary measure, the SSI, to ascertain the range of pre- to post-COI progressions across the six participating students (Table 5.9). The results indicated that the student who had made the greatest development was Emma, while the student who showed the lowest level of development was Brendan (Table 5.9).

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-COI score</th>
<th>Post-COI score</th>
<th>Post-COI score minus pre-COI score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emma</td>
<td>11</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>Corby</td>
<td>9</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Brady</td>
<td>10</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Darren</td>
<td>11</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>Anna</td>
<td>11</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>Brendan</td>
<td>11</td>
<td>19</td>
<td>8</td>
</tr>
</tbody>
</table>
Emma’s results are presented in Section 5.3.1, while Brendan’s results are presented in Section 5.3.2. To conclude, a summary of the impact of the COI on monitoring is presented in Section 5.3.3.

5.3.1 Emma

Emma’s results for monitoring are examined on the primary measure, the SSI, and the secondary measure, the TAA. The SSI consisted of six questions, one for each of the six components of monitoring. Emma’s pre- and post-COI responses are provided in Table 5.10.

Table 5.10
*Emma’s Pre- and Post-COI Responses on the SSI for Monitoring*

<table>
<thead>
<tr>
<th>Monitoring component</th>
<th>SSI focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive awareness</td>
<td>Thinking about the problem</td>
<td>“I see how the others are doing it and in maths I’ll use blocks.”</td>
<td>“I just like to have a go and I like to think of other ways of doing things.”</td>
</tr>
<tr>
<td>Self-observation</td>
<td>Self-questioning re difficult tasks</td>
<td>“I sometimes have trouble with my homework and I don’t really know why.”</td>
<td>“I know that I have learnt it so I try to think about how another person gets it right.”</td>
</tr>
<tr>
<td>Self-correcting</td>
<td>Choosing strategies for making corrections</td>
<td>“I cross it out and then I try again.”</td>
<td>“Well I would have a rough copy and I use the computer and sometimes ask Mum but also I will leave it out and go on and come back to it next time.”</td>
</tr>
<tr>
<td>Context experimentation</td>
<td>Attempting alternative approaches</td>
<td>“I ask someone next to me to help me.”</td>
<td>“I like to have a go at it and if I don’t get it right I try again – I use my own ideas and don’t need help.”</td>
</tr>
<tr>
<td>Need for help</td>
<td>Frequency of requests for assistance</td>
<td>“I try to work it out first then I ask the person next to me.”</td>
<td>“With story writing you can’t ask for help because it’s your own ideas so I just keep on and don’t ask for very much help.”</td>
</tr>
<tr>
<td>Motivation</td>
<td>What things provide motivation</td>
<td>“Well I think spelling and spelling tests help me to do my best.”</td>
<td>“It makes me feel good to work hard. I remember stuff for next time – stories! They help me and I hear what others are doing.”</td>
</tr>
</tbody>
</table>
The key elements of Emma’s responses were as follows.

Metacognitive awareness: Emma’s thinking has progressed from observing what others do (pre-COI) to thinking in other ways (post-COI). Her thinking has become more independent. The collaborative analysis, on the five-point evaluation scale, showed an increase from one (pre-COI) to three (post-COI), suggesting a moderate positive change in metacognitive awareness.

Self-observation: With difficult tasks, Emma has moved from not knowing why she has difficulty (pre-COI) to asking herself how others would approach this problem (post-COI). She is now observing and self-questioning. The collaborative analysis showed an increase from two (pre-COI) to four (post-COI), suggesting a moderate positive change in self-observation.

Context experimentation: Emma’s monitoring has developed from asking someone else for help (pre-COI) to using her own ideas (post-COI). She is trying alternative approaches. The collaborative analysis showed an increase from one (pre-COI) to four (post-COI), suggesting a substantial positive change in context experimentation.

Self-correcting: Emma’s aptitude for self-correction has progressed from trying again (pre-COI) to using several alternative methods (post-COI). She is now choosing strategies for self-correcting. The collaborative analysis showed a post-COI increase from two (pre-COI) to four (post-COI), suggesting a moderate positive change in self-correcting.

Need for help: Emma’s need for assistance has shifted from trying first then seeking help (pre-COI) to continuing to try and delaying seeking help (post-COI). She is showing more confidence and making fewer requests for assistance. The collaborative analysis showed a post-COI increase from two (pre-COI) to four (post-COI), indicating a moderate positive change in her requirements for help in her work.

Motivation: Emma’s source of motivation has changed from core learning areas (pre-COI) to a mix of working hard, stories and her peers (post-COI). The range of sources of motivation has broadened. The collaborative analysis showed an increase from three (pre-COI) to five (post-COI), suggesting a moderate change.

Taken together, Emma’s responses across the six components show greater independence, better thinking, and more confidence. There has been a moderate
development in her capacity for monitoring. The secondary measure, the TAA, focused predominantly on monitoring. The following question was posed at an appropriate break in the story. Emma was asked, “What is happening in the story and what are you thinking?” Her responses are compared from readings of the two stories, “The Greedy Dog and the Bone” and “Great Lion and Tiny Mouse”.

Pre-COI Emma’s response mirrored the narrative—First the man gave the dog a bone. He walked through the trees and over the bridge. He looks like a puppy, a Dalmatian.

Post-COI, Emma was more reflective—I think he is going to let the mouse go and then go hunting. The mouse is feeling a bit worried because it might have been a young mouse. It has always done anything it wanted to do so it feels pretty bad. The lion might eat it. Maybe it will, maybe it won’t. I’ll read a bit more now. I’d like to read the whole book.

Emma’s pre-COI comments came directly from the narrative showing little awareness of text inferences and no apparent monitoring. Emma’s post-COI response showed reflective thinking, for example, “The lion might eat it, maybe it will, maybe it won’t”, as well as reasoning and motivation. Her development is moderate to substantial. In summary, across both measures, the SSI and TAA, Emma’s development in monitoring appears to be moderate. This generally moderate progression should result in a positive impact on Emma’s self-regulated learning.

5.3.2 Brendan

Brendan’s pre- and post-COI responses to the six components of monitoring are presented in Table 5.11.
### Table 5.11

**Brendan’s Pre- and Post-COI Responses on the SSI for Monitoring**

<table>
<thead>
<tr>
<th>Monitoring component</th>
<th>SSI focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive awareness</td>
<td>Alternative ways of thinking about the problem</td>
<td>“Yes I do but I don’t know what the ways are.”</td>
<td>“Yes, kind of guessing and trying if it doesn’t sound right.”</td>
</tr>
<tr>
<td>Self-observation</td>
<td>Self-questioning re difficult tasks</td>
<td>“I don’t know – not really.”</td>
<td>“I don’t know.”</td>
</tr>
<tr>
<td>Self-correcting</td>
<td>Choosing strategies for making corrections</td>
<td>“I just ask someone that I’m sitting with or ask the teacher.”</td>
<td>“I’ll go to the bit that doesn’t make sense then try it again.”</td>
</tr>
<tr>
<td>Context experimentation</td>
<td>Attempting alternative approaches</td>
<td>“No.”</td>
<td>“Not sure. In reading I sound it out.”</td>
</tr>
<tr>
<td>Need for help</td>
<td>Frequency of requests for assistance</td>
<td>“I’m not sure, sometimes I do.”</td>
<td>“I try first then ask for help.”</td>
</tr>
<tr>
<td>Motivation</td>
<td>What things provide motivation</td>
<td>“Art is the only thing that makes me want to work hard.”</td>
<td>“To be good, get rewards and prizes, get it over and done with.”</td>
</tr>
</tbody>
</table>

The key elements of Brendan’s responses were as follows.

**Metacognitive awareness:** Pre-COI, no metacognitive awareness is evident. Post-COI, some awareness is evident, for example, Brendan is “guessing and trying”. His thinking shows some development. The collaborative analysis, on the five-point evaluation scale, showed an increase from one (pre-COI) to three (post-COI), suggesting a moderate positive change in metacognitive awareness.

**Self-observation:** Pre-COI there is no self-observation indicated. Post-COI is also nil. This component shows no development. The collaborative analysis similarly showed that Brendan’s self-observation level remained the same.

**Self-correcting:** Pre-COI there is no self-correcting. Post-COI there is a minimal change, for example, “I’ll try again”. Ability to self-correct shows some
Development. The collaborative analysis showed a post-COI increase from two (pre-COI) to four (post-COI), suggesting a moderate positive change in self-correcting.

Context experimentation: Pre-COI shows no capacity to experiment. Post-COI there is some progression for example, in reading he “sounds words out.” Some development is evident. The collaborative analysis showed an increase from one (pre-COI) to three (post-COI), suggesting a moderate change in context experimentation.

Need for help: Both pre- and post-COI responses were similar, indicating no reduction in his need for assistance. The collaborative analysis showed a post-COI level of three (pre-COI) and the same level post-COI.

Motivation: The range of factors that provide Brendan with motivation has increased. The collaborative analysis showed a post-COI increase from two (pre-COI) to four (post-COI), suggesting a moderate positive change in motivation.

Taken together, Brendan’s responses show a low level of development in his thinking, self-correcting, and motivation. Therefore, there appears to be minimal development in his capacity for monitoring. The secondary measure, the TAA, focused predominantly on monitoring rather than on the individual components. The following question was posed at an appropriate break in the story. Brendan was asked, “What is happening in the story and what are you thinking?”

Commenting on “The Greedy Dog and the Bone”, Brendan’s pre-COI response was brief and to the point—He ran through the trees to the shop. He was given a bone. He’ll take it home to eat it.

Brendan’s post-COI response for “Great Lion and Tiny Mouse” showed some increased tendency to monitor—The mouse nibbled on the lion’s foot and he woke up and put his paw on the mouse. He was going to eat it and the mouse said, Don’t eat me, if you let me go I will help you one day. The mouse is scared and sad because she has her own kids. It [the lion] will let her go.

Brendan’s pre-COI comments reflected the story line, showing no inferential monitoring. Post-COI, Brendan showed a small measure of reflection, for example, “The mouse is sad, the lion will let her go.” His progress on the TAA is minimal. In summary, across both measures, the SSI and TAA, Brendan’s development in
monitoring appears to be minimal. This level of development should result in a minimal positive impact on Brendan’s SRL.

5.3.3 Summary

Emma and Brendan’s development in monitoring, the third component of SRL, was assessed by means of the semi-structured interview and the think-aloud analysis. Taken together, the performance across the two measures for these two students, representing all participants, indicated the following. Emma’s development in monitoring appears to be moderate, which should result in a positive impact on her self-regulated learning, while Brendan’s development in monitoring appears to be minimal. Therefore, across all of the participating students, progression will vary from minimal to moderate. The range of participant scores for monitoring were of regular distribution, as shown in Table 5.9.

5.4 RESULTS FOR REFLECTION

Self-regulated learning requires an aptitude for evaluating one’s completed work with a view to making judgements and appropriate choices. The reflection phase of SRL has five components—evaluation, self-judgement, self-instruction, attribution, and choice behaviours. Reflection was measured using the SSI and the COS. An initial examination was made of pre- and post-COI results on the primary measure, the SSI. Responses to each reflection component were evaluated on the five-point scale to ascertain the range of pre- to post-COI progressions across the six participating students (Table 5.12). These results indicated that the student showing the highest level of growth was Anna, while the student showing the lowest level of growth was Darren.

Anna’s results are presented in Section 5.4.1, while Darren’s results are presented in Section 5.4.2. To conclude, a summary of the impact of the COI on reflection is presented in Section 5.4.3.

5.4.1 Anna

Anna’s results for reflection are reviewed on the primary measure, the SSI, and the secondary measure, the COS. The SSI consisted of five questions, one for each of the five components of reflection. Results for all students are displayed in Table 5.12. Anna’s pre and post-COI responses are provided in Table 5.13.
### Table 5.12

**Pre- and Post-COI Scores and Changes for Reflection**

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-COI score</th>
<th>Post-COI score</th>
<th>Post-COI score minus pre-COI score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna</td>
<td>9</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Corby</td>
<td>9</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Emma</td>
<td>9</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Brendan</td>
<td>7</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Brady</td>
<td>7</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Darren</td>
<td>9</td>
<td>16</td>
<td>7</td>
</tr>
</tbody>
</table>

### Table 5.13

**Anna’s Pre- and Post-COI Responses on the SSI for Reflection**

<table>
<thead>
<tr>
<th>Component</th>
<th>SSI focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>Methods of assessing own work</td>
<td>“I ask the teacher if I’ve got it right.”</td>
<td>“In maths I use rulers, in writing, editing [explains what editing is] full stops, titles, trading a big letter, checking words that I don’t know about.”</td>
</tr>
<tr>
<td>Self-judgement</td>
<td>Contemplating ways of improving results</td>
<td>“I don’t know.”</td>
<td>“I just keep thinking, use my times tables – use my fingers.”</td>
</tr>
<tr>
<td>Self-instruction</td>
<td>Self-questioning</td>
<td>“Yes I do ask questions.”</td>
<td>“Yes sometimes – you have to think about it – how can I improve this?”</td>
</tr>
<tr>
<td>Attribution</td>
<td>Perceptions of who guides learning most</td>
<td>“My teacher.”</td>
<td>“Teacher, parents and me! Talk and think (COI) helps me learn. I taught myself some things.”</td>
</tr>
<tr>
<td>Choice behaviours</td>
<td>Making choices for each consecutive learning process</td>
<td>“I’m not sure.”</td>
<td>“The teacher says or I look at the blackboard, ask my friends. At home I play for a while then Mum and I do something that we haven’t done before.”</td>
</tr>
</tbody>
</table>
The key elements of Anna’s responses were as follows.

Evaluation: Anna’s pre-COI response indicated no effort to evaluate independently. Her post-COI response showed a higher level of evaluation in describing a list of editing tools. Anna’s ability to evaluate her work has improved. The collaborative analysis, on the five-point evaluation scale, showed an increase from two (pre-COI) to five (post-COI), indicating a substantial change in Anna’s ability to evaluate her work.

Self-judgement: Pre-COI Anna demonstrated no awareness of, or need, to judge her own work. Post-COI she showed a limited suggestion of self-appraisal. The collaborative analysis showed an increase from one (pre-COI) to four (post-COI), suggesting a substantial positive change in self-judgement.

Self-instruction: Pre-COI Anna indicated that she did question herself to assist problem solving. This aptitude was reiterated post-COI in a slightly expanded form, showing minimal change here. The collaborative analysis showed an increase from two (pre-COI) to three (post-COI), showing a minimal positive change in self-instruction.

Attribution: In the pre-COI interview Anna attributed her outcomes to the teacher, whereas in her post-COI response she changed the focus to include herself and her own personal efforts. The collaborative analysis showed an increase from two (pre-COI) to five (post-COI), suggesting a substantial positive change in attribution factors.

Choice behaviours: Pre-COI Anna was “unsure” about making appropriate choices, whereas post-COI she showed an awareness of some choice-making strategies. The collaborative analysis showed an increase from two (pre-COI) to four (post-COI), indicating a moderate positive change in metacognitive awareness for Anna.

Thus, overall, Anna’s responses indicate a shift from a minimal demonstration of reflection skill in the pre-COI interview to a substantial awareness of the need to think about her performance and act decisively to better her school outcomes. The secondary measure, the COS, also indicates growth in reflection.

Pre-COI: Anna shows concern at any low grades, with some reflection on why they are not better. She understands her limitations and attributes her attainments to
her own capabilities, but she sees others as major contributors and tends to seek assistance. Anna leaves choice decisions to others.

Post-COI: Anna evaluates her results with increasing reflection on why some of her low results are not better. She knows her limitations but makes an effort regardless. Anna attributes her attainments to her own capabilities and tends to seek less assistance. Anna still tends to leave choice decisions to others.

These pre- and post-COI observations generally align with the SSI results, indicating development in evaluating her work and attributing her outcomes to her own efforts; however, choice behaviours remain unchanged. Her growth is moderate. Taken together, the two measures suggest a moderate to substantial positive change.

5.4.2 Darren

Darren’s pre- and post-COI responses are provided in Table 5.14.

Table 5.14
Darren’s Pre- and Post-COI Responses on the SSI for Reflection

<table>
<thead>
<tr>
<th>Reflection component</th>
<th>SSI focus area</th>
<th>Pre-COI response</th>
<th>Post-COI response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>Methods of assessing own work</td>
<td>“I’m not sure of any ways.”</td>
<td>“In reading – sound it out, read on, and come back. Editing in writing.”</td>
</tr>
<tr>
<td>Self-judgement</td>
<td>Contemplating ways of improving results</td>
<td>“I don’t worry.”</td>
<td>“Sometimes and when I’m in Grade 5 I’ll be able to do it.”</td>
</tr>
<tr>
<td>Self-instruction</td>
<td>Self-questioning</td>
<td>“Yes I ask myself then I ask the teacher for help.”</td>
<td>“No.”</td>
</tr>
<tr>
<td>Attribution</td>
<td>Perceptions of who guides learning most</td>
<td>“Me.”</td>
<td>“The teacher, me and my classmates.”</td>
</tr>
<tr>
<td>Choice behaviours</td>
<td>Making choices for each consecutive learning process</td>
<td>“The teacher tells me what to do next.”</td>
<td>“When I’m at home I just think about fishing, the four-wheeler and I plan on getting bait from the store.”</td>
</tr>
</tbody>
</table>
The key elements of Darren’s responses were as follows.

Evaluation: Darren’s pre-COI response revealed no desire to evaluate his work. His post-COI response indicated emerging evaluation strategies for reading and writing. The collaborative analysis, on the five-point evaluation scale, showed an increase from one (pre-COI) to four (post-COI), suggesting a substantial increase in evaluation skill.

Self-judgement: Pre-COI, Darren showed no wish to be self-judgemental. Post-COI, he was more aware of the need to cast a critical eye over his work. The collaborative analysis showed an increase from two (pre-COI) to three (post-COI), suggesting a minimum positive change in self-judgement.

Self-instruction: Pre-COI, Darren had some apparent need to question his work, coupled with assistance from the teacher. This need was not evident in the post-COI interview. The collaborative analysis showed an increase from one (pre-COI) to two (post-COI), suggesting a minimal self-instruction increase.

Attribution: Pre-COI, Darren’s attribution perception focused on himself, thus seeing his role in the learning process as the key element. Post-COI he attributed his progress across a wider group, suggesting a somewhat diluted perception of outcome responsibility. The collaborative analysis showed an increase from three (pre-COI) to four (post-COI), suggesting a minimal positive change in attributing responsibility to himself.

Choice behaviours: In Darren’s pre-COI response there was no indication of independent choice of activity. Post-COI, he showed an elevated interest in thinking ahead regarding his chosen activities. Hence, Darren’s responses generally indicate no progression in self-assessment with some change over the other components. Darren’s development in reflection is minimal. The collaborative analysis showed an increase from two (pre-COI) to three (post-COI), suggesting a minimal positive change in choice behaviours. In the secondary measure, the COS, Darren’s report indicated the following.
Pre-COI: Darren exhibits minimal evaluation and rarely reflects constructively on outcomes. There is some indication of his being responsible for his own actions. Minimal thought is given to self-direction. Darren does not make decisions independently.

Post-COI: Evaluation continues to be minimal. Darren rarely reflects constructively on outcomes; however, there is some indication of his being responsible for his own actions with some thought given to self-direction. Darren leaves decisions regarding his schoolwork to the classroom teacher.

These pre- and post-COI observations show little development in Darren’s capacity to be a reflective student, although a small change in attribution is evident. His growth is minimal. Taken together, the two measures suggest minimal change for Darren in reflection.

5.4.3 Summary
Anna and Darren’s progression pertaining to reflection, the fourth component of self-regulated learning, was appraised by means of the semi-structured interview and the collaborative observations synopsis. Taken together, the performance of both students across these two measures indicated a moderate to substantially positive development in reflection for Anna and a minimal change for Darren. The remaining four participating students’ progressions in reflection will, therefore, lie within Darren’s minimal development and Anna’s moderate to substantial development. Across the range of scores, although mainly positive, the results tended toward the lower section of the score range, as shown in Table 5.11.

5.5 CHAPTER SUMMARY AND CONCLUSIONS
This chapter focused on the first sub-question, “What impact does the COI appear to have on students’ self-regulated learning skills?” SRL has been evaluated by means of three methods; the SSI, the TAA and the COS. Although six students participated in the study, two students were selected within each SRL phase for closer analysis, their results representing the upper and lower limits of the overall findings. The results of this investigation are summarised under the four phases of SRL, namely, forethought, control, monitoring, and reflection.

Forethought: Corby and Darren were selected as the students showing the highest and the lowest progression levels for all six participants. The remaining four
participating students’ progressions in forethought were within the parameters of Corby’s moderate to substantial development and Darren’s minimal development. The results indicated that all participants exhibited positive change in their capacity to anticipate and plan.

Control: Anna and Brendan were selected to ascertain the overall results for control. The results for the other four students in the study were within Anna’s moderate progression for control and Brendan’s minimal progression. No negative results were suggested. All students in the study group showed positive movements in their sense of being in charge of their learning.

Monitoring: Emma and Brendan showed increased monitoring ability. The remaining four participating students’ progressions in monitoring lay within Emma’s moderate development and Brendan’s minimal development. There was a positive outcome across the cohort indicating, that these children now think about and monitor their performance as they learn.

Reflection: The reflection results for the selected representative students ranged from Darren’s minimal development to Anna’s moderate development. These results indicated a general improvement in the skill of reflecting and evaluating their work. They indicate a positive outcome regarding the impact of the COI on cognition and the development of a more independent and self-regulated style of learning.

Importantly, there is consistency in the spread of the results across all students in forethought, control, and monitoring. However, in the reflection phase the outcomes were weighted toward the lower end of the results spectrum. The results across three of the four phases of SRL indicate that the COI experience appears to provide cognitive benefits for students with learning difficulties.
Chapter 6: Results for Academic Self-Efficacy

This chapter focuses on the second sub-question guiding the study, “What impact does the COI appear to have on students’ academic self-efficacy?” The participants’ development of academic self-efficacy (ASE) (Jinks & Morgan, 1999) over the course of the community of inquiry (COI) was investigated by means of three pre- and post-COI measures two of which were integrated. The primary measure, the interactive student questionnaire (ISQ), was structured to examine the four sources of influence on academic self-efficacy, posited by Bandura (1977), and their essential components. Results from the ISQ (Appendix E) were supplemented by additional data from the secondary measure, the collaborative observations synopsis (COS), conducted and documented by both researcher and classroom teacher. The collaborative observations of student engagement throughout the COI and related classroom activities, were summarised in a collaborative report during the pre-COI and post-COI phases of the study. The COS data also included responses from each student’s learning log.

Results for each of the four influences on ASE will be discussed in relation to two participants. These two participants will comprise the students who demonstrated the highest level of change and the lowest level of change in each component of the four influences on ASE. Therefore, there are different representative students for each component of the four ASE influences. The degree of change over the duration of the study will be described, as no change, minimal change, moderate change, or substantial change, these being either positive or negative, as shown in Table 6.1.

Table 6.1
Descriptors for the Extent of Change indicated in Pre-COI to Post-COI Responses

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Number of progressions</th>
<th>Progression example</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change</td>
<td>0</td>
<td>Strongly agree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal change</td>
<td>1</td>
<td>Agree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate change</td>
<td>2</td>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substantial change</td>
<td>3</td>
<td>Strongly disagree</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The degree of change on the second measure, the COS, will be described as positive change or negative change. The four sources of influence on ASE are success, observational comparison, feedback, and physiological state. Each influence, together with its components, is presented in Table 6.2, together with the primary and secondary measures used to assess the components.

Table 6.2

Examination of Academic Self-efficacy

<table>
<thead>
<tr>
<th>Section</th>
<th>Major influences</th>
<th>Components</th>
<th>Primary measure</th>
<th>Secondary measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Success</td>
<td>self-belief</td>
<td>ISQ</td>
<td>COS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>communication persistence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>Observational Comparison</td>
<td>self-perception</td>
<td>ISQ</td>
<td>COS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>intrinsic motivation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>skill acquisition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>Feedback</td>
<td>extrinsic motivation</td>
<td>ISQ</td>
<td>COS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>skill awareness-goal adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4</td>
<td>Physiological State</td>
<td>enthusiasm-confidence</td>
<td>ISQ</td>
<td>COS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>comfort in the learning setting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. ISQ = Interactive student questionnaire; COS = Collaborative observations synopsis*

The following sections address each individual influence on ASE, namely, success (Section 6.1), observational comparison (Section 6.2), feedback (Section 6.3), and physiological state (Section 6.4). The chapter concludes with a summary (Section 6.5).
6.1 RESULTS FOR SUCCESS

Perceptions of success build a strong belief in one’s ability to achieve. With regard to changes in perceptions of success over the duration of COI, an initial examination was made of pre- and post-COI results on the ISQ. This examination indicated the two students demonstrating the greatest change and the least change in each component of success according to the ASE results analysis file. Results for the remaining four students fall within the range of, or at the same level as, the selected students’ results. Results for the three components of success follow, namely, self-belief (Section 6.1.1), communication (Section 6.1.2), and persistence (Section 6.1.3). A summary of the results for these three components concludes this section (Section 6.1.4).

6.1.1 Self-belief

Self-belief, the first component of the success influence on ASE, was assessed by two measures; the ISQ and the COS. Anna and Emma were selected as the two students with the highest and lowest changes from pre-COI to post-COI. The ISQ examined the participants’ responses to four statements focusing on self-belief in relation to homework (S\textsuperscript{3}), high school (S\textsuperscript{13}), and numeracy (S\textsuperscript{4}, S\textsuperscript{28}). The statements (e.g., “I usually understand my homework”) have been numbered according to the numerical sequence in the questionnaire. Table 6.3 presents the pre- to post-COI changes for Anna and Emma.

Table 6.3
Pre- and Post-COI Responses on the ISQ for Self-Belief

<table>
<thead>
<tr>
<th>Participants</th>
<th>Anna</th>
<th>Emma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment component</td>
<td>Pre-COI</td>
<td>Post</td>
</tr>
<tr>
<td>Self-Belief</td>
<td>Self-Belief</td>
<td>Self-Belief</td>
</tr>
<tr>
<td>Strongly agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. S = Self-belief, S\textsuperscript{13} = Self-belief statement number 13
Anna’s results for self-belief

Anna’s responses on the ISQ indicated that, over the duration of the COI, she perceived herself to have made positive improvements in her capabilities, as all four of Anna’s responses indicated positive change. Her progression in statement $S^{13}$, relating to success at high school, showed substantial change, while her two responses relating to numeracy, $S^4$ and $S^{28}$, changed moderately. For statement $S^3$, relating to homework achievement, Anna showed minimal change. Across all four positive responses, Anna’s results could be summarised as a moderate positive development in the self-belief component of success. The second measure, the COS, indicated a similar progression, as shown by the pre- and post-COI reports.

Pre-COI: Anna has low perceptions and beliefs with regard to her ability to achieve. She does not display confidence in herself.

Post-COI: Anna has positive perceptions and beliefs relating to her ability to achieve. She has a growing belief in herself.

Hence the COS report indicated a low measure of self-belief in the early stages of the COI implementation, while the post-COI observations reported positive development in Anna’s perceptions. Across both measures, the ISQ and the COS, development in Anna’s belief in her accomplishments is particularly positive. This development suggests a positive impact on her success perceptions at or above a moderate level.

Emma’s results for self-belief

Emma’s responses on the ISQ revealed minimal evidence of development in her self-belief over the duration of the COI. Only one response, $S^3$ pertaining to homework, showed positive change, while two responses, $S^4$ and $S^{28}$ pertaining to numeracy, remained unchanged. Her fourth response relating to success at high school changed negatively from agree to disagree. This response suggested that Emma may have been discouraged by COI discussions on this subject. Apart from a positive perception toward homework, Emma’s responses on the whole indicate little development in her self-belief. Results from the second measure, the COS, indicated a more positive self-perception in both pre- and post-COI synopses.

Pre-COI: Emma has a positive belief in herself. She has an optimistic belief in her own abilities.
Post-COI: Emma seems to have quite positive perceptions regarding her abilities and is making more effort in lesson tasks. She has an increased belief in herself.

The COS report showed positive self-belief pre-COI, with a small increase post-COI. Across both data sources, Emma’s belief in herself and her abilities did not appear to strengthen measurably. This deficiency in measurable change will probably result in no meaningful impact on her perceptions of her capabilities. Across the outcomes for both students, Anna exhibited moderate positive change in self-belief, while Emma’s post-COI results showed no measurable change. The results for the remaining four focus students were positioned at or within the range of results for Anna and Emma. Therefore, it would appear that the self-belief factors, relevant to success, for all students in the study are either constant or positive in terms of change thus indicating an overall positive impact on ASE.

6.1.2 Communication

Communication, the second component of success, was also assessed with the ISQ and the COS. Brendan and Brady were selected as the two students demonstrating the most growth and least growth respectively. The ISQ examined the participants’ responses to three statements (e.g., “I like answering questions in class”) focusing on communication skills relating to speaking (C\(^5\)), writing (C\(^{25}\)), and reading (C\(^{25}\)). Table 6.4 resents the pre- to post-COI changes for Brendan and Brady.

Table 6.4

<table>
<thead>
<tr>
<th>Participants</th>
<th>Brendan</th>
<th>Brady</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Component</td>
<td>Pre-COI Communication</td>
<td>Post-COI Communication</td>
</tr>
<tr>
<td>Strongly agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>C(^{25})</td>
<td>C(^5)</td>
</tr>
<tr>
<td>Disagree</td>
<td>C(^5)</td>
<td>C(^{10})</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>C(^{10})</td>
<td>C(^5)</td>
</tr>
</tbody>
</table>

Note. C = Communication, C\(^5\) = Communication statement number 5
**Brendan’s results for communication**

Brendan’s responses on the ISQ indicated that, across the duration of the COI, he perceived himself to have improved considerably in his communication skills. Brendan’s responses for writing and speaking, statements C\textsuperscript{5} and C\textsuperscript{10} respectively, indicated substantial and moderate perceived enhancement regarding his progress. For reading aloud, a minimal positive change to the *strongly agree* level was potentially more positive. Brendan’s perceptions relating to success in communicating therefore range from minimal to substantial. The second measure, the COS, indicated a comparable progression.

Pre-COI: Brendan was reasonably confident. He is experiencing some articulation difficulties. He is quite direct in his manner of communicating but there is little substance in his comments. He is making a reasonably good effort during the COI discussions.

Post-COI: He shows increased confidence but was still experiencing some speech difficulty. Brendan has continued to be outspoken, with improved quality of participation in the COI lessons. His thinking and reasoning have improved substantially.

Hence, Brendan’s sense of success in communicating has increased over the duration of the COI. In total, the two measures suggest a moderate to substantial development in Brendan’s communication perceptions and his capacity for engaging in discussion. It also implies a similar impact on success.

**Brady’s results for communication**

Brady’s responses in the ISQ show less development. His responses for reading aloud, statement C\textsuperscript{25}, indicated minimal growth in his perceived progress, while his post-COI response for speaking, statement C\textsuperscript{10}, remained at *disagree*, showing no progression. His response relating to writing advanced one progression to the upper *strongly agree* threshold. Therefore, Brady’s ISQ perceptions relating to success in communicating show generally minimal development. The second measure, the COS, indicated a marginally enhanced progression.

Pre-COI: Brady lacked confidence in the COI speaking sessions. He seemed emotionally stable and talks quite lucidly one-on-one.
Post-COI: Brady has gained confidence in the COI discussion sessions. He speaks very well and thoughtfully in one-on-one situations; however, he is still reticent in the COI.

This outcome generally aligns with the ISQ, implying that Brady’s confidence in the class interaction setting has developed only marginally. Together, the two measures suggest minimal development in Brady’s communication perceptions and his capacity for engaging in discussion. It also implies a similarly minimal impact on the success influence of his academic self-efficacy. Given these results for Brendan and Brady, development in communication attributes for all students in the study should result in a minimal to substantial progression toward their success perceptions and academic self-efficacy.

6.1.3 Persistence

Persistence, the third component of success, was also assessed using the primary and secondary measures. Emma and Corby were selected as the two students demonstrating the most development and the least development respectively. In the ISQ the students were required to respond to three statements (e.g., “I always get good marks when I try hard”) focusing on persistence. Table 6.5 presents the pre- to post-COI changes for Emma and Corby.

Table 6.5
Pre- and Post-COI Responses on the ISQ for Persistence

| Participants | Emma | | | Corby | | |
|---------------|------|------|------|------|------|
| Assessment component | Pre-COI Persistence | Post-COI Persistence | Pre-COI Persistence | Post-COI Persistence |
| Strongly agree | p_{11} | | p_{11} | |
| Agree | p_{6} | p_{20} | p_{20} | p_{6} |
| Disagree | p_{6} | p_{20} | |
| Strongly disagree | | | |

Note. P = Persistence, P^6 = Persistence statement number 6
**Emma’s results for persistence**

Emma’s ISQ results indicate a moderate progression for all three responses. Two of these, P\(^{11}\) and P\(^{20}\), related to trying hard in class, while P\(^{6}\) related to perseverance in reading. Emma’s perceptions have clearly changed to a perspective of agreement that working hard will assist her with schoolwork. Hence, her perceptions appear to support a more positive work attitude and increased persistence on her part. The second measure also suggests that Emma’s capacity for persistence has changed positively.

Pre-COI: Emma discontinues trying rather quickly. She does not appear to have a lot of persistence.

Post-COI: Emma is making a more independent effort. She is making more effort generally and trying harder to achieve.

These pre- and post-COI observations support the ISQ indicating that Emma has an enhanced capacity for persistence. Taken together, the two measures suggest a consistently moderate development in Emma’s persistence, additionally suggesting a similar impact on success.

**Corby’s results for persistence**

Corby’s ISQ results show a positive progression on only one response, with two remaining unchanged. His two post-COI responses, focusing on working hard to improve attainment, were divergent. Statement P\(^{6}\) was unchanged, while P\(^{20}\) progressed from agree to strongly agree, indicating some inconsistency in his perceptions. Corby’s post-COI response, regarding perseverance with reading, remained unchanged on agree. His overall result therefore, was positive but with only minimal change. The COS reported a more positive outcome.

Pre-COI: Corby enjoys contributing in the COI lessons; however, he does not see himself as an achiever and does not have a great deal of persistence.

Post-COI: Corby shows a consistent enthusiasm to contribute in COI lessons and this transposes to the classroom. Corby is trying much harder to achieve.

This data suggests a low measure of persistence in the early stages of the COI, while post-COI observations reported growth. Hence, the development in Corby’s capacity for persistence is more positive in the COS. However, across both measures
his results suggest a potentially minimal impact on the success influence of his academic self-efficacy. The results for both Emma and Corby indicate that the development in persistence for all students in the study will have changed in a positive direction at the conclusion of the COI. These results indicate a minimal to substantial progression for all six participants toward the success influence on ASE.

6.1.4 Summary

Perceptions of success build a strong belief in one’s ability to achieve. These results demonstrate the extent of the COI’s impact on student beliefs and perceptions. The success influence on academic self-efficacy has three essential components—self-belief, communication, and persistence. Results for the three components of success have indicated a predominantly positive change. Although some of the students showed nil or minimal growth in some areas, the overall trend for these six children with learning difficulties has been an enhancement of their perceptions of success, varying from no change to substantial change following the COI. The results indicate growth in their belief that with effort they can achieve.

6.2 RESULTS FOR OBSERVATIONAL COMPARISON

Observing children similar to themselves succeed by sustained effort enhances students’ self-perception that they too possess similar capabilities. Students’ perceptions regarding their performance in the classroom in comparison to others, was initially assessed by examining results on the ISQ. These results identified the two students who demonstrated the greatest growth and the least growth in each component of observational comparison. Results for the remaining four focus students fell within the range of, or at the same level as, the selected students’ results. The three observational comparison components are now addressed individually, namely, self-perception (Section 6.2.1), intrinsic motivation (Section 6.2.2), and skill acquisition (Section 6.2.3). Results for the three components are summarised in Section 6.2.4.

6.2.1 Self-perception

Self-perception, the first component of the influence of observational comparison, was assessed on the primary (ISQ) and secondary (COS) measures. Corby and Darren were selected as the two students demonstrating the most development and least development respectively. The ISQ required the students to respond to three
statements (e.g., “My classmates usually get better marks than I do.”) focusing on comparisons with the peer group. Of the six focus students, Corby demonstrated the most change, while Darren demonstrated the least change (Table 6.6).

Table 6.6

Pre- and Post-COI Responses on the ISQ for Self-perception

<table>
<thead>
<tr>
<th>Assessment component</th>
<th>Participants</th>
<th>Corby</th>
<th>Darren</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-COI Self-perception</td>
<td>Post-COI Self-perception</td>
<td>Pre-COI Self-perception</td>
</tr>
<tr>
<td>Strongly agree</td>
<td></td>
<td>SP\textsuperscript{8}</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td></td>
<td>SP\textsuperscript{8}</td>
<td>SP\textsuperscript{22}</td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td>SP\textsuperscript{17}</td>
<td>SP\textsuperscript{22}</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td></td>
<td>SP\textsuperscript{17}</td>
<td></td>
</tr>
</tbody>
</table>

Note. SP = Self-perception, SP\textsuperscript{8} = Self-perception statement number 8

Corby’s results for self-perception

All questions focused on comparisons of results and work performance. Corby’s responses to statements SP\textsuperscript{8} and SP\textsuperscript{22}, both relating to a comparison of attainment, were divergent, the first showing positive change and the second no change. A brief reference in statement SP\textsuperscript{8} to teacher assistance appeared to positively influence his strongly agree response. Although Corby’s ISQ outcomes for self-perception showed the most positive progression of all students, ranging from nil to moderate, his overall development across the ISQ is minimal to moderate. The measure of Corby’s self-perception is more positive in the COS.

Pre-COI: Corby does not have high self-esteem, which limits his self-perception as a learner. He has a consistent perception of himself as a below average student.

Post-COI: Corby’s self-esteem is stronger. He exhibits an enhanced self-perception as a participant in the COI setting, and seems to have an improved perception of himself as a learner.
These pre- and post-COI observations indicate a higher level of positive change in Corby’s self-perception than the ISQ results. Taken together, the two measures suggest a moderate development in Corby’s self-perception stemming from observational comparison.

**Darren’s results for self-perception**

Darren’s responses on the ISQ indicated no change in his perceptions relating to observational comparison of classroom performance. His responses to statement SP8, although in agreement that his marks were as good as his peers, remained unchanged post-COI. Darren’s overall outcome indicated neither positive nor negative change. There is some positivity in the COS observations of Darren’s behaviour.

Pre-COI: In Darren’s perception, he sees himself as a learner of reasonable ability; however, this self-perception is somewhat inflated.

Post-COI: Seems to accept that he has learning difficulties but is quite positive in some areas; for example, reading. Darren sees himself as an average but improving learner.

These pre- and post-COI observations indicate a marginally more positive change in Darren’s self-perception than the ISQ results. Across the two measures, Darren’s self-perceptions appear to be unchanged in the post-COI phase of the study suggesting no impact on his academic self-efficacy as a result of observational comparison.

**6.2.2 Intrinsic motivation**

The intrinsic motivation component of the influence of observational comparison was also assessed by means of the ISQ and COS. The ISQ required the participants to respond to two statements (e.g., “I am one of the hardest working students in my class”). On the primary measure (ISQ), Brady and Corby were selected as the two students for discussion (Table 6.7).
Table 6.7

*Pre- and Post-COI Responses on the ISQ for Intrinsic Motivation*

<table>
<thead>
<tr>
<th>Assessment component</th>
<th>Brady Pre-COI Intrinsic motivation</th>
<th>Brady Post-COI Intrinsic motivation</th>
<th>Corby Pre-COI Intrinsic motivation</th>
<th>Corby Post-COI Intrinsic motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>I(^{16})</td>
<td>I(^2)</td>
<td>I(^{16})</td>
<td>I(^2)</td>
</tr>
<tr>
<td>Agree</td>
<td>I(^2)</td>
<td></td>
<td>I(^2) I(^{16})</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* I = Intrinsic motivation, I\(^2\) = Intrinsic motivation statement number 2

**Brady’s results for intrinsic motivation**

The students responded to two statements, the first focusing on self-motivation to work hard and the second on the influence of teacher encouragement. Brady demonstrated a moderate but positive progression regarding his perceived motivation to strive in his schooling. His response to teacher-influence on motivation, although showing only one progression, was positive at the *strongly agree* ceiling. Results from the second measure (COS), suggests Brady’s intrinsic motivation has changed positively and is observable.

Pre-COI: Brady has a positive attitude in on-task situations. His intrinsic motivation is minimal and he exhibits a similar level of persistence.

Post-COI: Brady shows good motivation when on task. He is demonstrating considerable intrinsic motivation, with greater persistence and commitment to effort.

The COS indicates a moderate change in Brady’s intrinsic motivation. Taken together, the two measures suggest moderate development in Brady’s intrinsic motivation which appears to result from observational comparison.
**Corby’s results for intrinsic motivation**

Corby’s results on the ISQ indicated only one progression, albeit positioned at the upper *strongly agree* threshold. His response to statement I\(^2\), focusing on his perceptions of being one of the better students in the class, changed from *agree* to *strongly agree*. His response to statement I\(^{16}\), relating to teacher encouragement, was unchanged in the *agree* segment; therefore progression appears minimal. The second measure, the COS, suggests that Corby’s intrinsic motivation has changed more than the ISQ indicates.

Pre-COI: Corby seems to lack confidence, which affects his motivation. He does not appear to have a great deal of self-motivation.

Post-COI: Corby has more confidence, affecting his motivation in a positive way. His self-motivation has improved noticeably.

The COS results indicate that Corby has gained in both confidence and intrinsic motivation over the duration of the COI. Taken together, the two measures suggest a minimal to moderate development in Corby’s intrinsic motivation stemming from observational comparison with a potentially positive impact on ASE.

### 6.2.3 Acquired skills comparison

The acquired skills component of observational comparison investigated student perceptions of their skill development relative to their peers and the learning setting. The ISQ required the participants to respond to two statements (e.g., “I think my school has everything I need to learn new things”). Corby and Brady were selected as the two students indicating the highest and lowest outcomes (Table 6.8).
Corby’s results for acquired skills

The students responded to two statements, the first focusing on numeracy skills, while the second focused on the contribution that school resources make to skill acquisition. Corby’s responses on the ISQ indicated that, across the COI implementation, he had a moderately improved perception of his comparative skill level, particularly in numeracy. In his response to statement S\textsuperscript{14}, Corby’s perceptions were positive, progressing from agreement to strong agreement that the school’s resources could provide for his learning needs. The COS report also suggests that Corby’s perceived skill level has changed positively.

Pre-COI: When comparing himself to others Corby sees himself as having a lower level of ability. Corby has difficulty acquiring skills but is quite keen to persist.

Post-COI: Corby demonstrates positive comparisons with others in terms of ability. Corby’s skill acquisition and retention have improved.

The COS indicated a measurable positive change in Corby’s perceptions of his ability in comparison to his peers. Jointly, the two measures show moderate change in Corby’s belief in his skill development based on observational comparison. This should impact positively on his academic self-efficacy.
**Brady’s results for acquired skills**

Brady’s responses on the ISQ indicated that, during the COI, there was no change in his beliefs pertaining to his comparative skill acquisition. This outcome was demonstrated in his unchanged, albeit positive (*agree*), response to statement S\(^{14}\) regarding school resources, and similarly in his unchanged negative response relating to statement S\(^{12}\) on numeracy skill. The secondary measure (COS) also suggests that Brady’s skill level has not changed appreciably, although his perceptions are positive.

Pre-COI: Brady believes his skill level is satisfactory. He is conscious of his learning difficulties status, and his motivation to learn skills is quite low.

Post-COI: Brady continues to see himself as having satisfactory skills. His ability to learn skills is still not high, although he seems to be retaining information.

Brady has a relatively positive perception of his skill acquisition, although this is in contrast to ISQ statement S\(^{12}\) relating to numeracy. Taken together, the two measures show a nil to minimal change in Corby’s perceived skill acquisition; however, his perceptions are positive, suggesting a potentially positive impact on academic self-efficacy.

**6.2.4 Summary**

Observational comparison has three essential components—self-perception, intrinsic motivation, and acquired skills. These components were investigated using the ISQ and the COS. The results gave a positive indication that aptitudes of observed comparison with others contribute to academic self-efficacy. Results for the three components of observational comparison have indicated consistently positive outcomes enhancing the notion that, when children see other children succeeding by sustained effort, this raises their perceptions that they too possess similar capabilities. Although some of the participating students showed minimal growth in some areas, the overall trend has been a change in their perceptions of comparative skill and capability ranging from nil to moderate enhancement following the COI approach.
6.3 RESULTS FOR FEEDBACK

Feedback from peers and adults is important because it is easier for a student to gain academic self-efficacy if others provide encouragement and positive reinforcement. Changes resulting from feedback were assessed by the ISQ to determine the student who demonstrated the greatest growth and the student who demonstrated the least growth in each component. The two feedback components comprise extrinsic motivation (Section 6.3.1) and skill awareness-goal adjustment (Section 6.3.2). Results for the two feedback components are summarised in Section 6.3.3.

6.3.1 Extrinsic motivation

Extrinsic motivation is the first component of the influence of feedback on ASE. The ISQ examined the participants’ responses to two statements relating to perceptions about what others think (e.g., “My teacher thinks I am smart”). Of the six focus students, Corby demonstrated the most change, while Darren demonstrated the least change (Table 6.9).

Table 6.9

<table>
<thead>
<tr>
<th>Participants</th>
<th>Corby</th>
<th>Darren</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment component</td>
<td>Pre-COI Extrinsic motivation</td>
<td>Post-COI Extrinsic motivation</td>
</tr>
<tr>
<td>Strongly agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. E = Extrinsic motivation, S^{15} = Extrinsic motivation statement number 15

Corby’s results for extrinsic motivation

Corby’s responses on the ISQ relating to feedback from his teacher, statement E^{21}, and feedback from others, statement E^{15}, showed two positive progressions, these indicating minimal and moderate perceived growth in his motivation for
learning. It would seem that Corby’s post-COI motivation, as a result of feedback, has improved. The second measure, the COS, also suggested Corby’s extrinsic motivation has shifted to more positive ground.

Pre-COI: Corby views the input from others as a factor in his own learning. He is motivated extrinsically, and is very conscious of his peers and their attitude toward him.

Post-COI: Corby perceives the input from others as an important factor in his own learning. He is still noticeably influenced by the feedback he receives from both peers and teachers, particularly his friends. He seems considerably more motivated.

Feedback appears to be a positive influence on Corby’s motivation. Taken together, the two measures suggest a moderate development in Corby’s extrinsic motivation with a potentially positive impact on his academic self-efficacy.

**Darren’s results for extrinsic motivation**

Darren’s ISQ results show a minimal negative change in his response to statement E21 pertaining to teacher feedback. Across both responses he shows no positive progression regarding motivation associated with feedback. The collaborative observations synopsis indicates a similar pattern.

Pre-COI: Darren tends to indulge in unproductive behaviours much of the time. Darren does not appear concerned about his peers and their attitude toward him.

Post-COI: Darren continues to expend a lot of time unproductively. There is minimal change in his motivation and minimal motivation growth. He continues to appear unconcerned by the attitude of his peers.

The COS indicates only marginal growth in Darren’s motivation level. Across both measures, Darren shows nil to minimal development in extrinsic motivation, therefore a similar impact is to be expected on academic self-efficacy.

**6.3.2 Skill awareness-goal adjustment**

The second component of feedback addressed the students’ awareness of their skills and the extent to which they extended their goals. The students responded to three statements (e.g., “My friends think I am good at my work and they often ask me for help”) focusing on feedback-based skill awareness, while the COS focused on goal
adjustment. Of the six students, Brady demonstrated the most change while Darren demonstrated the least change (Table 6.10).

Table 6.10

Pre- and Post-COI Responses on the ISQ for Skill Awareness-Goal Adjustment

<table>
<thead>
<tr>
<th>Participants</th>
<th>Brady</th>
<th>Darren</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment component</td>
<td>Pre-COI</td>
<td>Post-COI</td>
</tr>
<tr>
<td>Skill awareness-goal adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>S18</td>
<td>S23</td>
</tr>
<tr>
<td>Agree</td>
<td>S23</td>
<td>S29</td>
</tr>
<tr>
<td>Disagree</td>
<td>S18</td>
<td>S29</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. S = Skill awareness-goal adjustment, S18 = Skill awareness-goal adjustment statement number 18

Brady’s results for skill awareness-goal adjustment

Brady’s three responses to the three ISQ statements ranged from no change to substantial change. All statements related to feedback from peers and family, focusing generally on perceptions of school attainment. Brady showed substantially positive change in his responses to statement S18, relating to family feedback regarding his school results, and moderate change regarding peer feedback (statement S23). His post-COI response for statement S29, pertaining to peer assistance, was unchanged. The second measure, the COS, also reveals only minimal positive change in Brady’s goal adjustment capacity.

Pre-COI: Brady rarely adjusts goals. He likes to help others but tends to neglect his own goals.

Post-COI: Brady sometimes adjusts goals. He has begun to realise the importance of setting goals.

Results from the two measures together suggest minimal to substantial development in Brady’s skill awareness and goal adjustment capacity as a result of feedback from peers and others. This could impact moderately on Brady’s ASE.
**Darren’s results for skill awareness-goal adjustment**

Darren’s responses on the ISQ indicated no overall change in his skill awareness or his capacity for adjusting goals. Darren’s response pertaining to peer assistance showed a minimal progression, while his response for statement S\(^{23}\) changed minimally in the negative direction. The second measure, the COS, similarly indicated no change in Darren’s perceptions of goal setting.

Pre-COI: Darren rarely sets or adjusts goals. Darren seems to believe he is building on his skill base but has difficulty setting goals.

Post-COI: Darren seldom thinks about setting or adjusting his goals other than his reading levels. He is relatively unconcerned about his own skill shortcomings and still has difficulty attending to goals.

Both measures, the ISQ and COS, indicate no change as a result of feedback in Darren’s capacity to apply awareness of his skills to setting goals.

**6.3.3 Summary**

Feedback has two essential components, extrinsic motivation and skill awareness leading to goal adjustment. These components were investigated using the ISQ and the COS. Feedback from peers and adults was shown to be important for students with learning difficulties because it is easier for a student to gain in self-efficacy if others provide encouragement and positive reinforcement. Results for the two components of feedback have indicated positive outcomes with an absence of negative results. The overall outcome for the six focus students has been a low to moderate increase in motivation and skill awareness inspired by others. Hence, it can be concluded that the feedback from peers and adults has led to a moderate level of enhancement for academic self-efficacy.

**6.4 RESULTS FOR PHYSIOLOGICAL STATE**

The fourth influence on ASE, physiological state, addresses student perceptions regarding their personal comfort and confidence in the learning setting. The two components of physiological state are investigated individually. Enthusiasm and confidence is presented in Section 6.4.1, comfort in the learning setting is presented in Section 6.4.2, and the results for these two components are summarised in Section 6.4.3.
6.4.1 Enthusiasm and confidence

The first component of physiological state focused on changes in each student’s enthusiasm and confidence across the COI study. The ISQ examined the participants’ responses to five statements (e.g., “It’s good when the bell goes at 9.00 a.m. so that we can go in and start our work”). Other statements addressed confidence, competence and belief in the importance of school. The two representative students, Brady and Darren, demonstrated respectively the highest and the lowest level of change (Table 6.11).

Table 6.11

*Pre- and Post-COI Responses on the ISQ for Enthusiasm-Confidence*

<table>
<thead>
<tr>
<th>Participants</th>
<th>Brady</th>
<th>Darren</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment component</strong></td>
<td><strong>Pre-COI Enthusiasm-confidence</strong></td>
<td><strong>Post-COI Enthusiasm-confidence</strong></td>
</tr>
<tr>
<td><strong>Strongly agree</strong></td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td><strong>Agree</strong></td>
<td>E&lt;sup&gt;26&lt;/sup&gt; E&lt;sup&gt;27&lt;/sup&gt; E&lt;sup&gt;9&lt;/sup&gt;</td>
<td>E&lt;sup&gt;9&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>E&lt;sup&gt;1&lt;/sup&gt;</td>
<td>E&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Strongly disagree</strong></td>
<td>E&lt;sup&gt;1&lt;/sup&gt;</td>
<td>E&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

*Note.* E = Enthusiasm-confidence, E<sup>1</sup> = Enthusiasm-confidence statement number 1

**Brady’s results for enthusiasm-confidence**

Three of Brady’s responses indicated positive progressions, two relating to confidence and one to enthusiasm, while E<sup>7</sup> on enjoyment of school, remained at the maximum positive threshold. Only the confidence statement, E<sup>9</sup>, on belief in ability, remained unchanged on the *agree* level. Overall these changes range from no change to moderate; however, they underscore positive perceptions. The second measure, the COS, also revealed positive change in Brady’s enthusiasm and confidence.

Pre-COI: Brady exhibits a consistent level of self-confidence. Brady is usually enthusiastic and shows brief bursts of enthusiasm but he is generally calm in manner.
Post-COI: Brady exhibits stronger self-confidence. He is increasingly reflective and enthusiastic, and continues to demonstrate a calm exterior and steady confidence. Brady shows a consistent belief in himself.

The COS indicates that Brady is demonstrating an increasing level of confidence, while his enthusiasm is stable and consistent. This largely aligns with the ISQ. Taken together, the two measures suggest a minimal to moderate development in Brady’s enthusiasm and confidence. Some positive impact could be expected on Brady’s academic self-efficacy.

**Darren’s results for enthusiasm-confidence**

Darren’s responses on the ISQ indicated minimal perceived growth in his enthusiasm and confidence; however, there was considerable positivity. Two responses showed progression, albeit minimal, with one remaining unchanged. Responses for enthusiasm resulted in one positive and one negative change. Overall, Darren’s results range from a minimal negative change to a minimal positive change; however, three of the five responses were positive progressions. A similar level of change is evident in the secondary measure.

Pre-COI: Darren is enthusiastic at times. He appears to have low self-esteem. Darren’s confidence appears to be growing very slowly. He is gaining confidence in the classroom.

Post-COI: Darren’s self-esteem has increased noticeably. Darren is sometimes enthusiastic. His self-confidence has improved slowly as well as his sense of acceptance within the classroom. Darren seems willing to adopt a more positive and enthusiastic approach.

In the post-COI phase, Darren appears to have marginally increased confidence. Together, the two measures suggest a nil to minimal increase in enthusiasm and confidence for Darren. Only a minor impact would be anticipated on physiological state and his ASE.

**6.4.2 Comfort in the learning setting**

The second component of physiological state focused on changes in each student’s comfort in the classroom and other learning environments. The ISQ required the students to respond to three statements (e.g., “I think I work hard and it makes me..."
feel good”) for the participants to respond to. Two further statements addressed comfort with learning new work and confidence in speaking. The two representative students, Corby and Brendan, demonstrated the most change and the least change respectively (Table 6.12).

Table 6.12

<table>
<thead>
<tr>
<th>Participants</th>
<th>Corby</th>
<th>Brendan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment component</td>
<td>Pre-COI Comfort in the learning setting</td>
<td>Post-COI Comfort in the learning setting</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>C&lt;sup&gt;30&lt;/sup&gt;</td>
<td>C&lt;sup&gt;24&lt;/sup&gt;</td>
</tr>
<tr>
<td>Agree</td>
<td>C&lt;sup&gt;30&lt;/sup&gt;</td>
<td>C&lt;sup&gt;24&lt;/sup&gt;</td>
</tr>
<tr>
<td>Disagree</td>
<td>C&lt;sup&gt;30&lt;/sup&gt;</td>
<td>C&lt;sup&gt;24&lt;/sup&gt;</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>C&lt;sup&gt;30&lt;/sup&gt;</td>
<td>C&lt;sup&gt;24&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Note. C = Comfort in the learning setting

Corby’s results for comfort in the learning setting

Corby’s responses on the ISQ indicated that over the duration of the study he perceived that his comfort in the learning environment had developed substantially. His three responses revealed minimal, moderate and substantial positive change. His perceptions, relating to a sense of comfort in the classroom, have grown at least moderately. The second measure, the (COS), indicated less growth.

Pre-COI: Corby is positive at most times. He is gaining confidence relating to his acceptance within the classroom.

Post-COI: Corby appears to enjoy most aspects of school life. He has become more positive in the learning environment, and has fewer problems relating to his place and right to be in the classroom.

Although the pre-COI observations reported a relatively positive level of comfort in the learning setting for Corby, the degree of positive change was lower than the ISQ outcomes. Taken together, the two measures indicate moderate
development in Corby’s comfort in the learning setting, suggesting a moderate impact on his ASE.

**Brendan’s results for comfort in the learning setting**

Brendan’s responses on the ISQ produced a negative outcome in his perceptions relating to feeling comfortable in the classroom. Although he responded positively regarding his sense of feeling good when working hard, the prospect of speaking in front of the class and coping with new work resulted in two negative post-COI responses. The second measure, the COS, indicated a minimal improvement in this component.

Pre-COI: Brendan has difficulty engaging with learning activities. He is gaining confidence regarding his place in the classroom but exhibits negative behaviours.

Post-COI: Brendan shows improved ability to engage in learning activities. There is some improvement in his sense of feeling positive in the classroom and his behaviour is stabilising.

The COS indicated a more positive post-COI outcome for comfort in the learning setting. The ISQ indicated minimal negative change while the COS was more positive. These results could be interpreted as negative to minimum positive change in Brendan’s sense of comfort and well-being in the classroom, with potentially no change in his physiological state and ASE.

**6.4.3 Summary for physiological state**

The fourth influence on ASE, physiological state, addresses student perceptions regarding their personal comfort and confidence in the learning setting. Physiological state has two essential components, enthusiasm-confidence and comfort in the learning setting. These components were investigated by means of the ISQ and the COS.

Results for physiological state have indicated a positive post-COI development. Results across all students are either unchanged or show a minimal to moderate increase relating to the students’ sense of comfort in the classroom setting. The post-COI changes suggest that the participating students have become more secure in their sense of well-being in the classroom environment.
6.5 CHAPTER SUMMARY AND CONCLUSIONS

This chapter has focused on the second sub-question guiding the study, “What impact does the COI appear to have on students’ academic self-efficacy?” Academic self-efficacy was investigated by means of two pre- and post-COI measures. The primary measure, the ISQ and the secondary measure, the COS, examined the four sources of influence on academic self-efficacy. Six students participated in the study providing a dependable range of generally positive results for ASE. The results of two students, representing the upper and lower level of progression, were selected for closer analysis. The results are summarised for each of the ASE influences—success, observational comparison, feedback, and physiological state.

Success: Results for the three components of success—self-belief, communication, and persistence—have indicated a predominantly positive change across the participants. Although some of the students showed nil or minimal growth in some areas, the overall trend for these six children with learning difficulties has been an enhancement of their perceptions of success ranging from nil to substantial. Hence, there has been growth in their belief that with effort they can achieve.

Observational comparison: Results for the components of observational comparison, encompassing self-perception, intrinsic motivation, and skill acquisition, have indicated a continuing positive change. Although some of the students showed little growth in some areas, the overall trend for the six children with learning difficulties has been an enhancement in their perceptions of personal skill acquisition and capability ranging from nil to moderate following the COI approach.

Feedback: The key elements of feedback include intrinsic motivation, skill awareness, and goal adjustment. The results have indicated positive outcomes with an absence of negative results. Some of the students exhibited minimal development, while the post-COI data has shown a low to moderate enhancement of their motivation and perceived skill awareness as a result of feedback from their peer group and their teachers.

Physiological state: Results for physiological state, encompassing enthusiasm, confidence, and comfort within the learning setting, have indicated a mostly positive post-COI development. Results across all students ranged from unchanged, for one student only, to moderate development. The post-COI changes show that the students...
in the study have become more secure in their sense of well-being in the classroom environment.

Overall, the results suggest that the COI has impacted positively on the academic self-efficacy of the participating students although other factors such as maturation, may have contributed to their improvement. Across the results from all of the four influences on ASE, the prevailing progression has been a positive shift in the perceptions and learning aptitudes for all of the six students toward an enhanced level of ASE. This change is now examined in terms of tangible academic outcomes. The impact of the COI on reading comprehension is examined in Chapter 7.
Chapter 7: Results for Reading Comprehension

This chapter focuses on the third sub-question guiding the study, “What impact does the COI appear to have on students’ reading comprehension?” Changes in reading comprehension levels over the course of the community of inquiry (COI) were investigated by means of formal pre- and post-COI measures. The Neale Analysis of Reading Ability (NARA) is supported by two supplementary tests, the Waddington Diagnostic Reading Test and the PM Benchmark reading test. The following sections include results for the NARA and supplementary tests (Section 7.1), and conclusions regarding the impact of the COI on reading comprehension in students with learning difficulties (Section 7.2).

7.1 READING COMPREHENSION

To assess changes in reading comprehension following the COI intervention, three tests were administered. The following sections include results from the Neale Analysis of Reading Ability (Section 7.1.1), Waddington Diagnostic Reading Test (Section 7.1.2) and PM Benchmark (Section 7.1.3).

7.1.1 Neale Analysis of Reading Ability

The Neale Analysis of Reading Ability includes two equivalent standardised tests, one of which was administered pre-COI and the other administered post-COI (Section 3.2.4). Although the NARA provides results for word accuracy as well as comprehension, the focus in this study was on the reading comprehension component. The following results show the raw scores for the comprehension questions answered correctly and the comprehension reading age calculated according to the Neale formula. The results for the six student participants are presented in Table 7.1. The reading age increase column represents the difference, in years and months, between the pre-COI and post-COI reading age results.
Table 7.1
*Results: Neale Analysis of Reading Ability*

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-COI scores</th>
<th>Post-COI scores</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw score</td>
<td>Reading age</td>
<td>Raw score</td>
</tr>
<tr>
<td>Anna</td>
<td>8</td>
<td>7.0</td>
<td>20</td>
</tr>
<tr>
<td>Brady</td>
<td>6</td>
<td>6.8</td>
<td>17</td>
</tr>
<tr>
<td>Corby</td>
<td>10</td>
<td>7.4</td>
<td>18</td>
</tr>
<tr>
<td>Brendan</td>
<td>6</td>
<td>6.8</td>
<td>14</td>
</tr>
<tr>
<td>Darren</td>
<td>9</td>
<td>7.2</td>
<td>21</td>
</tr>
<tr>
<td>Emma</td>
<td>4</td>
<td>6.4</td>
<td>18</td>
</tr>
</tbody>
</table>

As the students’ have advanced nine months in terms of their chronological age, the reading age increases shown, less nine months, indicate a validated reading age improvement. The results of the Neale Analysis suggest a general improvement in reading comprehension across all six students. The column at the right, showing reading age increases, demonstrates the change in reading comprehension over the nine-month period of the study. All participants experienced a reading age increase over and above their nine-month age progression. Emma’s results show the highest progress with an advance of 28 months over the time frame of the COI timetable, suggesting a substantiated improvement of 17 months. Brendan made the least progress, with an improvement of five months after an adjustment for his normal age increase. The average improvement overall was 12 months in terms of reading age progression, after adjustment for normal aging over the nine-month study. Variables such as regular classroom learning and parent reading support at home may also have impacted on these results, however, state and national testing (NAPLAN, 2012) indicate generally lower levels of reading progress in Year 4 children with regression common in Year 5. Hence, an indication that there may be a causal relationship between this study’s reading comprehension outcomes and participation in the COI.
The NARA has provided evidence of increased reading comprehension levels for the six students. In the following sections, these results are correlated with the Waddington Diagnostic Reading Test and the PM Benchmark test.

### 7.1.2 Waddington Diagnostic Reading Test

The Waddington Diagnostic Reading Test was administered at the beginning of the study for pre-COI data, and again at the conclusion for post-COI data. The raw score was obtained from a total of 60 graded, multiple-choice questions. The reading age was then calculated using the test conversion formula. The results are presented in Table 7.2.

#### Table 7.2

*Results: Waddington Diagnostic Reading Test*

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-COI results</th>
<th>Post-COI results</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw score</td>
<td>Reading age</td>
<td>Raw score</td>
</tr>
<tr>
<td>Anna</td>
<td>34</td>
<td>7.9</td>
<td>43</td>
</tr>
<tr>
<td>Brady</td>
<td>19</td>
<td>7.5</td>
<td>43</td>
</tr>
<tr>
<td>Corby</td>
<td>28</td>
<td>7.4</td>
<td>40</td>
</tr>
<tr>
<td>Brendan</td>
<td>30</td>
<td>7.6</td>
<td>41</td>
</tr>
<tr>
<td>Darren</td>
<td>34</td>
<td>7.10</td>
<td>44</td>
</tr>
<tr>
<td>Emma</td>
<td>27</td>
<td>7.3</td>
<td>38</td>
</tr>
</tbody>
</table>

The results of the Waddington test indicate a consistent level of improvement in reading comprehension across all six students, but reading age gains are lower overall than the results of the NARA. The column at the right, showing each student’s reading age increase, demonstrates the change in reading comprehension over the nine-month period of the study. All participants experienced a reading age increase over and above their chronological age progression. Brady’s results show the highest progress, with an advance of 20 months over the nine-month COI timetable, adjusted to 11 months taking into account his increased chronological age over the nine-month COI program, while Brendan made the least progress again with 14 months improvement adjusted to five months validated improvement. The
average improvement overall was 16 months reading age progression, less nine months age increase, indicating a validated reading age improvement of seven months.

7.1.3 PM Benchmark

The consistency in the above outcomes compares favourably with the third reading comprehension instrument, the PM Benchmark test, the results of which are stated as a decimal fraction of each year rather than months. As with the previous tests, the PM Benchmark reading test was administered both at the commencement and conclusion of the study. The student’s reading comprehension age was calculated by assessing the child’s reading level using running records based on a range of thirty PM levels. Results are rounded to the nearest year or half-year. The PM Benchmark results are presented in Table 7.3.

Table 7.3

*Results: PM Benchmark Reading Assessment*

<table>
<thead>
<tr>
<th>Student</th>
<th>PM level</th>
<th>Reading age</th>
<th>PM level</th>
<th>Reading age</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna</td>
<td>18</td>
<td>7–7.5</td>
<td>25</td>
<td>9.5</td>
<td>2–2.5</td>
</tr>
<tr>
<td>Brady</td>
<td>19</td>
<td>7.5</td>
<td>24</td>
<td>8.5–9</td>
<td>1–1.5</td>
</tr>
<tr>
<td>Corby</td>
<td>17</td>
<td>7</td>
<td>23</td>
<td>8.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Brendan</td>
<td>16</td>
<td>7</td>
<td>21</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Darren</td>
<td>20</td>
<td>7.5–8</td>
<td>25</td>
<td>9.5</td>
<td>1.5–2</td>
</tr>
<tr>
<td>Emma</td>
<td>17</td>
<td>7</td>
<td>22</td>
<td>8.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

The results of the PM Benchmark test show a consistent improvement in reading comprehension across the six participating students with learning difficulties. The column at the right shows the reading age increase by year or half-year. All participants experienced an increase, with some, as with the Neale Analysis, improving by twice the total nine-month period of the COI program. Anna’s results show the highest increase, with an advance of more than 24 months which adjusts to 15 months allowing for her age increase. Brendan had the least improvement with 12
months reading age increase adjusted to three months given his chronological age increase. The average improvement across all participants was 21 months reading age progression over the nine month study time frame.

7.2 CONCLUSIONS

This chapter presented the results for the third sub-question guiding the study, “What impact does the COI appear to have on students’ reading comprehension?” The six participants’ development in reading comprehension over the course of the COI was investigated by means of three formal pre- and post-COI measures. The NARA, and two supplementary tests—the Waddington Diagnostic Reading Test and the PM Benchmark reading test.

The results of the NARA revealed a general improvement in reading comprehension across all six students. All participants achieved an increase over and above their chronological age progression during the study, with four of the six students doubling the expected increase in reading age for the study time frame. The results of the Waddington test also indicated a consistent level of improvement in reading comprehension across all six students; however, these were generally lower than those demonstrated in the NARA. The results of the PM Benchmark test similarly indicated a consistent improvement in reading comprehension attainment across the six students. All participants achieved an increase, with some of the students, as with the NARA, doubling the nine months of the COI implementation. The average improvement overall was 21 months reading age progression over the nine-month study. All three tests indicated an improved reading comprehension capacity for the six students. After considering other variables such as classroom reading support and parental assistance, and state and national tests, the results seem to suggest a beneficial impact from the COI, and the cognitive processes inherent in the program, on students with learning difficulties.

The results for reading comprehension, in addition to results of SRL and ASE, have fundamental implications for the central question, “What impact does participating in the community of inquiry (COI) process have on students with learning difficulties? The main research question will now be discussed in Chapter 8 in terms of the overall findings on one of the participant students.
Chapter 8: Impact of the COI on learning difficulties—a case report

This chapter reports on the overall results of one of the students in the study and describes her progress across the full extent of the community of inquiry (COI) process. Anna was one of the focus participants in this research. Although she was not the student with the best overall outcomes at the conclusion of the COI, she appeared to benefit from engaging with COI in a range of ways that illustrate the apparent breadth and depth of impact that COI can have on students enrolled in a classroom comprised of a diverse range of students. The findings indicated that Anna made positive gains in her development of self-regulation and academic self-efficacy, as well as substantial progress in developing her reading comprehension skills. In addition, Anna appeared to enjoy the experience, although more so in the second half of the program as her confidence and the frequency and quality of her social interactions with both peers and teachers grew. Additionally, recent anecdotal information indicates that Anna is continuing to achieve at school. Section 8.1 profiles Anna as a student with learning difficulties and describes her responses in the early phase of the COI implementation, and Section 8.2 provides observational data describing Anna’s responses in the final phase of the program. Section 8.3 presents the pre- and post-COI results from the principal sources of data, Section 8.4 discusses the impact of the COI on Anna’s learning and Section 8.5 provides a chapter summary.

8.1 PROFILE OF ANNA

Anna’s level of participation in the COI discussions was observed as being in the median range across the six students in the study. Although quite shy in the early stages, Anna grew in confidence and actively enjoyed the COI lessons. She often expressed her enthusiasm and belief that, “It is good for my brain.” Due to her apparent difficulties with learning, Anna participated in the school-based diagnostic assessment program in Year 2 and was assessed as a student with learning difficulties. This assessment was confirmed again in Year 3 prior to the year of the
study. Assessments completed at the end of Year 3 indicated that her attainment level in literacy was significantly below the state mean on the Year 3 test, reading and viewing, her reading age being approximately 1.5 years behind her chronological age. The following year, when Anna and her classroom peers graduated to Year 4, the COI approach was implemented in her class of 26 students, the program spanning nine months of the school year. The six participating students were profiled at the beginning of the school year prior to the pre-COI data gathering which took place shortly after the beginning of the school year. Some aspects of Anna’s profile read as follows:

Anna lacks confidence in class lessons and to some extent avoids making a contribution, but in the main her responses are sensible and meaningful. Anna is reticent and speaks very quietly and hesitantly. She speaks well in one on one situations, with clear diction. She is quite studious and concerned about her low attainment levels and is making some effort to resolve areas of difficulty. Anna is polite and well behaved (Year 3 classroom teacher).

Over the first few weeks of the COI lessons the environment of questioning and spontaneous student interaction was somewhat daunting for Anna. Given her reticence, she found it difficult to participate in the flow of ideas and exchange of views, which was at this point dominated by the more outspoken students in the group. Inclusive COI strategies assisted the less confident and supported their participation. For example, the “Fishbowl”, comprising a small model group, seated centrally, provided opportunities for selected students to be involved. A limit on the number of responses each student could make fostered equality. Selecting another speaker to respond was frequently determined by rolling a ball to that student promoting fair-mindedness. These approaches gave Anna early opportunities to be included and to make her own contribution, although somewhat apprehensively. The level of Anna’s confidence and perceptions as she monitored her abilities was low. The following assessment was from researcher and teacher observations on Anna’s early involvement in the program.

Very quiet but speaks clearly one to one or in a small group, and is quite honest about her difficulties. Anna does not have confidence in her own abilities but does have a satisfactory level of self-motivation. Relies on others for guidance. Has a perception of herself as a slow learner. Anna has
difficulty acquiring and retaining skills, however her willingness to try may overcome this (pre-COI observations).

The COI lessons proceeded according to the program’s plan of two lessons per week, with ongoing progress through the nine topics covered each school term. Toward the middle of the year, positive changes seemed to be evident in Anna’s self-assurance, as well as her ability to communicate her ideas and opinions. She was thinking more independently and her confidence and enjoyment of the COI process was growing.

8.2 OBSERVATIONS OF ANNA’S PROGRESS

In the later stages of the study collaborative observations indicated positive changes in her reasoning, communication skills and willingness to participate. Anna’s abilities in the COI interaction process, and changes in her efficacy for forming opinions and sharing her thoughts, had increased. This increase may possibly have resulted from the inclusive environment of the COI and acceptance by others of her views. She was still reticent but displayed a need to be part of the discussion and to make her voice heard. Continuing observations during the final weeks of the year monitored the COI participatory skills of all six students in the study group. At this time, the collaborative observations made by both the classroom teacher and the researcher were collated in report form for comparison with the students’ skill levels at the beginning of the program. These observation reports included data from direct observations of the COI sessions, video replays and anecdotal classroom records. The teacher also recorded notes with specific regard to the participating students’ development of reasoning during every COI lesson. The collaborative observations synopsis (COS) revealed the following changes in self-regulated learning (SRL) for Anna.

Pre-COI synopsis prepared by the researcher in consultation with the classroom teacher:

Anna doesn’t appear to see planning as part of her learning. She values learning, but a lack of confidence in her own ability to achieve is evident. Appears to focus on current tasks rather than goal-setting. Her primary motivation is improving her level of attainment, however she doesn’t explore alternative strategies, or give problem areas a reasonable degree of thought.
before seeking help. She tends to seek assistance with most of her difficulties.

Post-COI synopsis prepared by the researcher in consultation with the classroom teacher:

Anna views planning as an important facet of her schoolwork and places a high value on learning. She has gained confidence in her ability to achieve but still appears to focus on current tasks rather than goal setting. Demonstrates considerable motivation in improving her level of attainment, and seems to be a more independent thinker. Sometimes explores alternative strategies. Gives problem areas a good degree of thought before seeking help and likes to do her best independently before getting assistance.

The post-COI synopsis suggests development in confidence and independence in her efforts to achieve. Anna appears to have developed cognitive strategies and is applying this skill to problems before seeking help.

Anna’s learning log also revealed changes across the duration of the program. Personal reflections on her feelings of enjoyment and efficacy beliefs were recorded in her learning log entries every second week of the program. The following synopsis on her learning log entries across the first two months of the program provided insights into Anna’s level of confidence as a learner.

Anna is motivated extrinsically by those around her. She is aware of her own learning shortcomings and at this stage has difficulty setting goals. Her confidence appears to be quite low and she is sometimes a little overwhelmed by the scope of the curriculum. Her enthusiasm is evident and she wants to take her place in the learning setting (pre-COI learning log analysis for COS).

The learning log entries across the final two months of the program provided the following insights into Anna’s sense of success in literacy and as a learner.

Anna is more communicative and making a good effort in the COI and enjoying the lessons although still shy. Has a growing belief in her improving abilities and working hard to raise her attainment levels in areas of difficulty. Although still much influenced by the feedback she receives from both peers and teachers, she has a stronger determination and better self-motivation. Anna’s learning log indicates a most satisfactory perception
of herself as a learner, and her skill acquisition and retention has improved (post-COI learning log analysis for COS).

Learning log entries indicated that she was enjoying her schooling more and there was a growing enthusiasm for learning. Her recordings suggested that she was proud of her achievements during the year and positive about her current skill level particularly in literacy. Following are examples of pre- and post-COI learning log recordings. Responding to the interview question: How did your schoolwork go this week?

Pre-COI: “Not that good because I didn’t get much of my work right.”

Post-COI: “It was good. I’m a better reader. I understand what the book is about.”

The post-COI comment indicated a higher level of accomplishment and a sense of success. Anna’s learning log recordings varied, however, the entries quoted above were generally typical of her responses. Anna was asked to comment on her experience in the COI:

Anna’s pre-COI comment—“It helps me work hard. Corby keeps talking to me. I liked the story.”

Anna’s post-COI comment—“It helps our thinking so that when we are older we will know heaps of things.”

Anna seems to be of the opinion that the COI experience is of benefit to her mind and memory.

8.3 RESULTS FROM THE PRIMARY MEASURES

The following results from the primary measure for each sub-question provide an overview of Anna’s progress in self-regulated learning, academic self-efficacy, and reading comprehension.

**Self-regulated learning**

The principal method was the semi structured interview during which Anna was asked 20 questions pertaining to each component of the four SRL phases; forethought, control, monitoring, and reflection. Each response was evaluated from one to five relating to her level of aptitude in the components of each phase, for example, planning. These evaluations on each response for each question were
corroborated by the classroom teacher and a learning support teacher. Across the 20 interview responses, Anna’s self-regulated learning grew from an overall aptitude score of 36 (pre-COI) to 74 (post-COI). On the TAA her aptitude score associated with self-regulation in reading, increased from 29 (pre-COI) to 59 (post-COI), a substantial increase.

The following example of Anna’s pre- and post-COI responses in the interview indicates the level of change for locus of control. Responding to the question: *Do you like completing tasks on your own or do you prefer to get lots of help along the way?*

Pre-COI: “I get help, I like getting help”.

Post-COI: “I prefer to do it on my own and later ask the teacher if it’s really, really hard but I like to do it myself.”

Anna’s post-COI response indicates a higher level of internal locus of control.

**Academic self-efficacy**

The principal method for collecting data on academic self-efficacy was the interactive student questionnaire, during which Anna was provided with 30 statements pertaining to each component of the four ASE influences—success, observational comparison, feedback, and physiological state. Each response was evaluated from one to four on her level of aptitude in each component, for example, persistence. Across the 30 questionnaire responses, evaluated on the one to four scale, Anna’s overall academic self-efficacy score rose from 76 (pre-COI) to 101 (post-COI).

The following example of Anna’s pre- and post-COI responses in the questionnaire indicates her level of self-belief. Anna’s responses to Statement S13, *I’m sure I’ll do well when I get to high school*, were as follows:

Pre-COI: strongly disagree

Post-COI: strongly agree.

On this response Anna’s belief in her capability to succeed at high school showed substantial change. All four of Anna’s responses on the questionnaire showed some positive change suggesting an increasing level of self-belief.
Reading Comprehension

The principal instrument measuring reading comprehension changes during the study was the Neale Analysis of Reading Ability (Neale, 1994). This test was administered pre- and post-COI, and recorded changes in Anna’s reading comprehension age across the duration of the study. The Waddington Diagnostic Reading Test (Waddington, 2000) and PM Benchmark (Smith & Nelley, 2002) test, provided additional information about Anna’s development of reading comprehension skills. The results of the three tests (see Section 7.1) are presented below, showing the increase in Anna’s reading comprehension age, in years and months, at the conclusion of the nine-month study.

- Neale Analysis of Reading Ability          2.2 years
- Waddington Diagnostic Reading Test       1.4 years
- PM Benchmark                              2.3 years

Across the three tests, Anna’s comprehension reading age appears to have increased, on average, by approximately one year and 11 months during the nine-month study period. This can be interpreted as one year and two months development when taking into account her age progression during the program.

8.4 IMPACT OF THE COI ON ANNA’S LEARNING

Before participating in COI sessions, Anna was identified as having learning difficulties and low achievement in literacy. She was struggling with much of her schoolwork and presented with a passive learning style. She had difficulty evaluating and monitoring her learning performance and this resulted in minimal use of learning strategies. The findings of the study indicated a general improvement in her ability to engage in self-regulation. The findings also suggest that the COI has impacted positively on Anna by helping her to believe that she can be a successful learner; that is, heightened her sense of academic self-efficacy. Anna’s development in academic self-efficacy was associated with higher levels of persistence and increased self-confidence and enthusiasm for learning. Additionally, there were indications that the interactive procedures of the COI, as well as the questioning, reasoning, and conceptual development, assisted in improving Anna’s language comprehension. This development may have contributed to her improved reading comprehension.

Anna exhibited low reading levels prior to the beginning of the study while over the
period of the COI sessions, there was positive growth in the development of her reading comprehension skills. Across all three reading comprehension measures, her results demonstrated a mean improvement of approximately 21 months in her reading age over the nine-month duration of the study. This improvement is influenced by the COI’s guided focus on stories, questioning, and critical and creative thinking processes. Therefore, it seems that the COI has had a positive influence on Anna’s reading comprehension.

The results suggest that the COI has had a positive impact on the functioning of this Year 4 student who had been previously identified as having learning difficulties. Findings indicate that Anna became more self-regulated in her thinking processes, developed greater academic self-efficacy and strengthened her reading comprehension skills. In Anna’s words: (Learning Log entry in the final weeks of the COI)

“I’m learning much more than at the beginning of the year and I’m a better reader. I’m trying to do most of the work by myself. “Talk and Think” (COI) has helped my confidence. It has helped me to think of heaps of things, and answer questions, and create my own (questions), and it helps with other learning too”.

8.5 CHAPTER SUMMARY

The case report on Anna provided an overall perspective on the results of one of the students in the study and described her progress across the full extent of the COI process. Anna’s experience in the COI appears to have had a positive impact on both cognitive skills and social-emotional capability for this Year 4 student who had previously been identified with learning difficulties. Findings indicate that Anna has become more self-regulated in her thinking processes, developed greater academic self-efficacy, and shows strengthened reading comprehension skills.
Chapter 9: Discussion

This chapter discusses, interprets and evaluates the findings of the study with reference to the literature. There are six parts, beginning with an introduction (Section 9.1). The subsequent three sections discuss emergent issues relating to self-regulated learning (SRL) (Section 9.2), academic self-efficacy (ASE) (Section 9.3), and reading comprehension (Section 9.4). The impact of the community of inquiry (COI) on children with learning difficulties is discussed (Section 9.5), and a summary concludes the chapter (Section 9.6).

9.1 INTRODUCTION

The study was initiated because of my interest and concern for children with learning difficulties, a concern shared by many teachers in the schools in which I have taught. My experiences also confirm that teachers work hard to meet the needs of all students, but necessarily must implement educational programs that are effective for the majority of students. The factors contributing to students’ difficulties with learning are complex (Dudley-Marling, 2004) and may include both primary difficulties (e.g., weak decoding skills) as well as secondary difficulties (e.g., stress, anxiety, and social-emotional difficulties). Emotional influences can have an extensive impact on learning (Ashdown & Bernard, 2012). These influences are especially relevant in early years of schooling where the foundations of emotional security, confidence and self-esteem are set in place (Clay, 1991).

Three relevant requirements emerged from the literature relating to support for students with learning difficulties. The first was a need for reading skills (Duke & Pressley, 2005), the second cognitive support to build self-regulated learning (SRL) skills through better thinking processes (McInerney & McInerney, 2002), and the third, emotional support by nurturing self-belief and self-confidence (Ashdown & Bernard, 2012) to strengthen academic self-efficacy (ASE). Accordingly, there is a need for an intervention approach that integrates both cognitive and emotional factors, as proposed in the research questions in this study.
In this study, a social-cognitive teaching method, the community of inquiry (COI), was adopted and implemented within the day-to-day work of a regular classroom to investigate its impact on the functioning of students with learning difficulties. According to Cam (2006), the COI, has a particular focus on thinking and conceptual exploration, thus it has the potential to stimulate metacognition. COI teaches students not only to think together but also to think for themselves, creating a positive influence on cognitive skills, which are then internalised through the social practices of intellectual exchange (Cam, 2006). Additionally, COI can build on a child’s personal and social-emotional development by strengthening self-knowledge and understanding (Curtis, 2012). It is an intervention directed at cognitive development but has also been suggested that it can promote self-confidence and self-esteem (Hinton, 2003). As a result, COI has the potential for developing SRL skills, ASE, and reading comprehension skills. The focus of this research was to investigate the COI’s influence on children with learning difficulties and the impact it might have on their academic functioning. The principal research question reflects this focus while the three sub-questions focus on the three specific domains of interest. The principal research question, “What impact does participating in the community of inquiry (COI) process have on students with learning difficulties?”, centred on investigating the possibility that the COI might have a positive impact on the academic functioning of students with learning difficulties. The sub-questions centred on potential outcomes attributed to COI, namely, self-regulated learning, academic self-efficacy, and reading comprehension.

Six students—Anna, Emma, Brady, Corby, Brendan and Darren—were selected as the case study participants after having been previously identified with learning difficulties. The COI was implemented as a class-wide program in the classroom of these students during nine months of the school year, with the purpose of investigating changes in SRL, ASE and reading comprehension. The discussion now focuses on the findings for each question and interprets the implications for the objectives of this research.

9.2 SELF-REGULATED LEARNING

This section discusses the key findings relating to SRL following implementation of the COI which has been claimed to impact positively on children’s self-regulation including those with learning difficulties (Curtis, 2012). COI has considerable
relevance to Vygotsky’s (1978) social learning theory as it is a social process encompassing social interaction and collaborative inquiry. COI procedures of social-cognitive interaction help children to think for themselves, a natural extension of Vygotsky’s theory of cognitive development (Cam, 2006). The social interaction (interpersonal) develops conceptual thinking strengthening reasoning and judgement (intrapersonal). COI is a metacognitive process through which, Cam claims, children begin to gain a greater control over their own thinking and become more self-regulated in their thought processes. This discussion seeks to identify patterns and changes that have emerged within the four phases of SRL (see Section 2.2).

Three measures were used for gathering data on SRL. In the first measure, the semi-structured interview (SSI), the students responded verbally to 20 statements relating to aspects of self-regulation in their learning. For the second measure, the think-aloud analysis (TAA), the children read aloud and provided intermittent commentary on the story. The third measure, the Collaborative Observations Synopsis (COS), comprised a progress report based on recorded, video and anecdotal observations by both researcher and teacher. The four phases of SRL are forethought, that is students’ abilities to anticipate and plan (Section 9.2.1), monitoring which includes self-observation and self-correction (Section 9.2.2), control, involving the initiative to use strategies (Section 9.2.3) and reflection, the ability to self-judge and demonstrate choice behaviours (Section 9.2.4).

9.2.1 Forethought

COI is credited with having the potential for developing broader and more comprehensive thinking through its questioning processes, collaborative inquiry, and creative thinking in the student group (Millett & Tapper, 2012). This study revealed growth in self-directed thinking across the cohort, particularly in terms of interest, anticipation and planning. This finding links with some of the principal elements of forethought within the framework for SRL posited by Pintrich (2000) including planning, efficacy judgement, and goal orientation. These are attributes that are often limited in children with learning difficulties (Chan & Dally, 2001).

Of the forethought components, particularly noteworthy in the findings were the positive changes in the children’s ability to think ahead with a growing sense of self-direction. This finding is significant because, as Chan and Dally (2001) point
out, children with learning difficulties typically show limited understanding of effective self-directed learning strategies such as goal setting, planning, and evaluating their learning for self-improvement. Lowe (2010) adds that the capacity to plan activities purposefully was the cognitive area that teachers and parents reported to be most problematic for students with learning difficulties. This study’s findings across the participant group indicate an increased capability in planning strategies and forward judgement, as evidenced in the SSI and TAA student responses. This is difficult to document in regular class activities, however, the class teacher in her reporting, considered that the COI procedures were more conducive to cognitive skill enhancement and forward thinking, than the classroom learning environment. McLeod (2010) confirms that metacognitive judgements of what is going to occur are made as students actively monitor their reading comprehension. An example of efficacy judgement was demonstrated in Corby’s SSI responses. For the question pertaining to difficult tasks, Corby commented, “I like to give it a go. You don’t know if you are good at something or not, so you have to give it a go to see if you are good.”

Evaluations taken across all participant students, as shown in Table 5.3, indicate that four of the six students exhibited an emerging increase in planning strategies and developing judgement. These metacognitive aptitudes are considered a possible outcome from COI procedures (Sharp, 2004). They appear to be founded on an increased interest and value that the students are placing on their work. This increasing interest is consistent with the findings of Zimmerman (2000), who argues that underlying the forethought processes are key self-motivational beliefs including self-efficacy, intrinsic interest or valuing, outcome expectations, and goal orientation.

The findings from this study suggest that metacognition and good judgement has increased, the students showing a greater propensity for strategic thinking, which aligns with previous studies demonstrating the metacognitive impact of interactive dialogue (Cam, 2006). Wang et al. (1993) also state that metacognitive processes are foremost among the areas of influence on school performance, having a substantial effect on learning. In summary, the findings for the forethought phase of SRL show that engagement in the COI seems to have had a positive impact on the students’ ability to exercise forethought, or anticipation and planning before engaging in academic tasks.
9.2.2 Control

The findings for control indicated changes in each student’s sense of ownership of their learning. A growing sense of being in charge was demonstrated by an increasing understanding that they had the capacity to control their own thinking (Millett & Tapper, 2012). There was also an emerging tendency for the students to adopt thinking strategies, accompanied by an increased level of persistence. One student responded—“I prefer to do it on my own and later ask the teacher if it’s really, really hard—but I like to do it myself.” The findings indicated that all of the study participants made some progress in these areas.

Contrary to studies that show children with learning difficulties exhibit diminishing effort (Robinson, 2002), there was growing confidence and persistence evident among the participants. The students demonstrated persistence in their responses on two of the methods used for data collection, the SSI and the TAA. Across most of the students there was a developing aspiration to persist with difficult tasks by applying alternative strategies to solve problems. Strategy selection could be interpreted as a constructive development because difficulties experienced by many students are associated with their non-strategic learning style (Chan & Dally, 2001). Similarly, Bosson et al. (2010) found that children with learning difficulties often show limited or inefficient strategy use in most tasks. Efficient strategy use requires a degree of metacognitive awareness and a capacity for applying thinking strategies. The research group exhibited greater preference for developing and employing strategies. This may be a result of the metacognitive nature of the COI approach through its questioning and critical thinking procedures (Jenkins & Lyle, 2010).

Across most of the participant group there was a heightened awareness of, and need for, independence in their work and a desire to try things by themselves rather than asking for help. They seemed to be taking greater responsibility for their learning and displaying an increasingly internal locus of control. Therefore, the six participant students appear to have developed a capacity for planning and control similar to that of most typically developing students during learning processes (Gilmore & Cuskelley, 2005), as well as exhibiting more determination and effort. In summary, the results for the control phase of SRL showed generally positive development, across all of the participant students, relating to their ability to take charge of their learning.
9.2.3 Monitoring

The results indicated an increasing level of self-observation and a growing aptitude for self-monitoring of thinking skills. Hinton (2003) observes that the COI provides young minds with a greater capacity to engage in thinking processes and develop deeper understandings, while Vansiegleghem and Kennedy (2011) describe a COI as a setting where children can seek their own answers through the self-regulatory practice of thinking for themselves.

The degree to which student thinking and monitoring has been enhanced through the COI can be linked to changes in self-evaluation and is a focus area in the data gathering for this study’s measurement of monitoring. The findings across the study participants indicated positive changes and observable development in monitoring, or contemplating their own learning performance. Responses for Emma and Brendan who represented the six participants, demonstrated changing thought processes that suggested increased monitoring aptitudes. For example, one of Emma’s responses regarding self-observation in the semi-structured interview was as follows—“I just like to have a go and I like to think of other ways of doing things. I know that I have learnt it so I try to think about how another person might try to get it right.” Emma appears to be demonstrating monitoring ability.

Brendan was assessed at the lower progression level and exhibited a lesser degree of growth in self-observation and monitoring. Emma and Brendan both appear to display monitoring skills, which implies positive changes in self-monitoring for all of the participant students. Claxton (2002) suggests that self-monitoring and insightful thinking allows children to change direction, leading to a more critical mode of thinking. The results of this study show increasing awareness of the need to assess the amount of effort needed, while the think-aloud data indicated some evidence of self-correction. This noticeable increase in the level of reflection to monitor performance is not usual in students with learning difficulties. Knight and Scott (2004) state that students with learning difficulties are usually characterised as non-strategic learners, who may have few or poor self-monitoring behaviours. However, Emma appears to be aware of the availability of alternative strategies at her disposal, indicating growth in her metacognitive development. This development has positive implications for monitoring and self-regulation (Bruce & Robinson, 2004). Emma’s outcomes also have positive implications for learning, as
findings by Lowe (2010) indicate that, difficulties with students’ ability to use cognitive strategies impede their schoolwork. Across the six participant children, consistently moderate development in monitoring was evident. All students exhibited metacognitive attributes that helped them to monitor their progress and importantly there was evidence of self-correction. In summary, the findings for the monitoring phase of SRL indicated that in the post-COI phase of the study, all students appeared to show an improved capacity to contemplate their progress in academic tasks.

9.2.4 Reflection

Metacognitive development similarly played a fundamental role in the reflection phase of SRL, which aligns with Chan and Dally’s (2001) findings that metacognition is responsible for the deployment of self-regulatory attributes. This connection is borne out in this study’s findings, which showed increased levels of reflective thinking among the students following their engagement in COI. COI appears to have played a positive role in increasing each student’s ability to reflectively evaluate their performance and make judgements on how they can improve. Other studies show that the impact of interactive dialogue with the peer group has a role to play in stimulating reflection and problem solving through the process of clarifying issues (Curtis, 2012). Interactive dialogue similarly seems to impact on self-directed learning and reflective thinking (Hinton, 2003, Sharp, 2004). The findings also indicate that, as a result of a growing aptitude for independent, reflective thinking, all of the focus group took an increasing degree of responsibility for learning upon themselves. Rather than attributing learning outcomes to external factors, they perceived learning as contingent upon their own behaviour (Knight, Paterson, & Mulcahy, 1998).

For example, Corby’s response for reflection indicated a shift in his attribution, while also showing a propensity for self-judgement. When asked (post-COI) about the people who support his learning, he responded, “Me and my teacher. I have a go first because you can get much better by yourself.” The results across all students varied but gains were generally moderate and consistent with other SRL phases. They indicate development in some of the key areas of reflection that impact on SRL. These key elements include evaluation and cognitive judgement (Sharp, 2004). The development of independent, reflective thinking appears to have influenced the gains achieved.
It can be reasonably concluded that the interactive procedures in the COI have impacted on these particular reflection and self-judgement skills. As Splitter (1993) claims, the COI is a program that expands on the capacity for reflection and inquiry that the participants acquire as they learn to listen, respect the ideas and opinions others, and interact supportively. In summary, the study findings for the reflection phase of SRL showed positive outcomes across the participants following their engagement with COI.

9.3 ACADEMIC SELF-EFFICACY

The second sub-question was, “What impact does the COI appear to have on students’ academic self-efficacy?” This section discusses the results for ASE. It draws on Bandura’s (1977) social-cognitive theory pertaining to the means by which individuals develop beliefs about their ability and how they manage their learning through observation, imitation and reinforcement in social settings (see Section 2.1.2). ASE is also supported in the COI procedures through the broader understandings and the development of social dispositions that assist the students to be active classroom participants (Cam, 2006). This discussion focuses on changes in emotional attributes that were apparent subsequent to the COI. Previous research indicates that COI develops enhanced self-esteem, confidence, and a willingness to participate (Curtis, 2012).

The four influences on academic self-efficacy for children include their growing perceptions of success, observing others, feedback from peers and adults, and their physiological state of confidence and enthusiasm. A key element of the ASE model is self-belief; however, this important component of self-efficacy is also linked to self-regulation and the metacognitive elements of SRL. The interplay between independent thinking skills and self-confidence has been an emerging theme in this study. Through engagement and social interaction with others, children with learning difficulties can see themselves as being competent learners within their peer group, developing greater belief in themselves and confidence to take charge of their own learning. As Borkowski (1992) argues, there are fundamental linkages between self-regulation and motivational beliefs. As strategic and self-management processes become more refined, students come to recognise the importance of being strategic, and as a result feelings of self-efficacy emerge.
This discussion seeks to identify changes in the students’ academic self-efficacy that have become evident following their engagement with the COI. Two data collection methods were used to investigate ASE—the ISQ which uses an agree or disagree response to ASE statements, and the COS comprising a progress report from video and anecdotal observations by both researcher and teacher. The latter method also incorporated information obtained from student learning logs. The four main influences on academic self-efficacy, posited by Bandura (1977), are accomplishment or a sense of success (Section 9.3.1), self-appraisal when observing the performance of others (Section 9.3.2), feedback from peers and others (Section 9.3.3), and physiological state of confidence, enthusiasm and well-being in the classroom (Section 9.3.4).

9.3.1 Success

The findings suggested that perceptions of success in the study group seemed to be influenced by social-emotional issues and self-belief which impacted on ASE. Learning difficulties are often intensified by emotional reactions to a lack of success (Westwood, 2008). Therefore, social-emotional skills are essential if children are to gain a sense of success at school (Elksnin & Elksnin, 2004). The positive changes that have occurred over the duration of the nine-month COI study, suggested an improvement in each student’s perception that they are capable of achieving. For example, on responses relating to questions about learning, there was a positive change in beliefs about successful academic outcomes. Results for five of the six students indicated a progression in self-belief, while Emma plateaued showing little change from her relatively stable pre-COI level. Observations and video also indicated self-belief progressions. Corby, for example, was reported in the COS as showing more confidence in his ability. Corby’s COI responses are also positive demonstrating high confidence in COI speaking sessions during which he was consistently keen to contribute.

Corby’s mid-range outcomes indicate consistent development in self-belief as well as increased persistence. This study’s findings suggest that the COI has impacted positively on self-confidence as similarly noted by Millett and Tapper (2012) who found that the COI supported a sense of “I can do it”. The emerging picture is one of change in the students’ belief in their own competencies. This view corresponds with previous studies claiming that the COI approach raises self-
perceptions and self-belief (Hinton, 2003; Sharp, 2004). In describing Year 3 student responses during COI lessons, Jongsun (2010) found the lower achieving students felt more confident in expressing themselves during the COI discussion. This study’s findings show that, in addition to enhanced self-belief and persistence, success in communication is demonstrated. The findings for ASE indicate that speaking confidence and fluency has developed through the COI processes conducted in a supportive, interactive environment that embraces problem exploration and questioning. Sharp and Oscanyan (1980) support this supposition. They state that social-cognitive approaches encourage verbal confidence and the ability to articulate and reason, while Jenkins and Lyle (2010) claim the dialogic talk during COI interaction empowers the children to have a belief in the value of their opinions and gives them a voice. It provides an opportunity for children to explore and articulate ideas they have not previously said or even thought before (Vansieleghem & Kennedy, 2011).

In summary, the findings for the success influence on ASE underlined the importance of self-belief in the process of building perceptions of success. The findings support previous research that demonstrates the role that social-cognitive approaches play in overcoming emotional concerns with which children with learning difficulties often struggle. A central finding is the positive role that the COI appears to have played in building a belief that success is achievable.

9.3.2 Observational comparison

The data for observational comparison underlined the importance of observing and learning from others. When working collaboratively with the peer group in social interaction, the focus group of students with learning difficulties were conscious of, and attentive to, the performance of their peers. Their vicarious reflections on other students seemed to affect both self-perceptions and skill development in an environment where children are building their ideas together by sharing ideas (McLeod, 2010). The very nature of the COI environment makes it conducive to peer observation but in a supportive impartial setting. In this study the setting provided an observation platform where language and communication was the stimulus for the children to make assessments on their own development. Bandura (1977) states that social-cognitive vicarious experiences allow self-appraisal of personal performance in relation to the attainments of others. The COI interactive, language-based
environment appeared to be beneficial, not only for confidence and motivation but also for the development of language skills which Snowling et al. (2011) argue are among the best predictors of educational success.

The six students in this study were observably conscious of their performance as they made comparisons with the other students during the course of each COI lesson. These observations had an influence on their self-perceptions. Children, like adults, place great importance on being with and observing others, as well as being appreciated, listened to and accepted by their peers. “Not only do children need to be taught about social competence but they also need opportunities for working with others to foster acceptance” (Knight, Graham, & Hughes, 2004, p. 181). The findings from this study for the six children with learning difficulties are consistent with the benefits from the COI described in the literature. Most studies have focused on mainstream students. This research has shown that children who struggle with learning can also benefit from the COI, particularly in their social-emotional abilities. The growth in academic self-efficacy belief for the participants was a critical factor in the positive changes that occurred. A comparative control group of mainstream students may not have provided relevant data for this area as they tend to be more confident and emotionally stable. The results have indicated that the study students’ levels of positive self-perception had progressed at a similar pace to the self-belief gains described in Section 9.3.1 on success.

There was also a noticeable development in motivation and an awareness of the importance of skill acquisition. This awareness through observing others is consistent with Bandura’s theories on the role that peers play through observation and interaction in a social-cognitive environment (Bandura, 1977). Naylor and Cowie (2000) agree that peers have a crucial role to play in developing sound thinking strategies and enhanced metacognition. They contend that, it is not just the encounter that brings about change, but the internalisation of this joint intellectual activity. In summary, the findings indicated that observed and interactive peer activities, as experienced in the COI, appeared to play an important role in building positive student self-perceptions and nurturing motivation and skill development.
9.3.3 Feedback

Feedback from the peer group and teachers influenced self-belief in a similar way to observational comparison. The messages received from others resulted in the students’ growing awareness of their own skill development and made them more conscious of their capacity to achieve. Bandura (1997) asserts that self-efficacy is the belief in one’s capabilities to set goals and perform sufficiently well to achieve them. This study revealed an increasing level of self-belief as a result of growing skill awareness, but it found less evidence of increasing goal awareness. For example, observations indicated that working on a new task was motivating, but the purpose and the goal of the task not of high importance. The COS observations indicated that, across the study group, there were only occasional efforts made in setting new goals. This finding is not consistent with the claim of Zimmerman (1995), who argued that self-efficacy in turn raises the academic goals students set for themselves in specific areas. This disconnect between the literature and this study’s findings may lie in the fact that students with learning difficulties, particularly when they are young, need more time than the nine-month duration of the study to extend their learning aptitudes to goal adjustment. Emma, for example, whose outcomes for feedback were positioned midway across the overall results, wrote the following in her November learning log in the final stages of the study, “I know I can read heaps better and I am doing well at maths.” The collaborative observations measure showed no change in goal adjustment for Emma. Pre- and post-COI comments remained the same: “Emma’s peers provide some motivation for raising her sights (regarding goals).” Emma’s level of change typifies the results of the study group. Awareness of skills, self-belief and motivation showed minimal to moderate gains, while goal adjustment levels showed little change.

The findings pertaining to the influence of feedback indicate some development in self-belief and self-efficacy. This development has conceivably resulted from social interaction and peer feedback creating more awareness of improving abilities. Feedback seems to have been of benefit to these students. Nevins and Manning (2002 similarly state that feedback affirms or disconfirms their developing sense of self, because healthy interpersonal communication is a process of developing as an individual. Although this study reveals little evidence of enhanced goal-setting, the results in other ASE areas are positive showing general
development. The overall outcome for these six children with learning difficulties has been a constructive progression in the belief in their developing abilities. In summary, feedback seems to have made a positive impression on student self-belief and motivation, although changes in goal adjustment appear to be minimal.

9.3.4 Physiological state

There are strong indications that the combined influence of success, observational comparison and feedback, influenced and strengthened the students’ physiological state by enhancing the well-being of the students. In other words, the first three of Bandura’s (1997) psychological influences on self-efficacy have played an important role in helping to overcome the emotional barriers that children with learning difficulties experience. Building confidence, motivation and self-belief in children with learning difficulties is clearly a priority if they are underperforming in the classroom (Ashdown & Bernard, 2012). These emotional gains have led to a better physiological state of confidence, enthusiasm and an increasing feeling of comfort in the classroom for the six participants. Hinton (2003) and Sharp (2004) claim that there is evidence to suggest that metacognitive development in the COI helps to improve student self-perception, confidence, and a sense of well-being. Although the post-COI observations do not indicate substantial change across the participants, there has been a moderate and consistent lift in the physiological state of the students, particularly relating to confidence and enthusiasm.

Two students, Brady and Darren, together demonstrated that across the participant group there had been modest gains in the social-emotional aspects of their physiological state. In responding “agree” or “disagree” to statements such as “I enjoy coming to school and working hard”, Brady shifted from a pre-COI position of disagreement to post-COI agreement, while Darren, although on the lower score level, made three positive responses relating to “enthusiasm”. These progressions typified the trend of responses. It was not outstanding, but the development was consistent. For the wider participant group, and even for Darren, confidence relating to skill levels, social acceptance, and improved aptitudes for communicating have emerged as facilitating factors in the students’ growing perception that they are becoming competent learners. This outcome seems to have nurtured increasing enthusiasm. Knight, Graham, and Hughes (2004) state that when students feel socially accepted by their peers, there are benefits for self-esteem, motivation and
academic achievement. These outcomes are supported by Hinton (2003), who found that the COI environment was conducive to a positive effect on confidence and self-perception through the process of communicating in a supportive environment where students’ views are accepted, respected and listened to. McLeod (2010) described how the COI students listened closely to each other and provided grammatical and vocabulary assistance helping them to develop within their zone of proximal development (Vygotsky, 1978). Both listening reflectively and being listened to respectfully are essential parts of the COI process, and contribute to both skills and beliefs.

The findings for physiological state confirm an emerging capacity for greater confidence and enthusiasm following the nine-month duration of the COI implementation. The findings suggest that the COI’s atmosphere of peer acceptance and mutual respect has been encouraging for the students’ comfort in the learning environment. These outcomes are particularly important for children with learning difficulties. In summary, the combined influences of success, observational comparison, and feedback, have all played a role in shaping this key indicator of a child’s enjoyment of school. Physiological state embraces confidence and enthusiasm, which in turn fosters a sense of well-being and comfort in the learning setting.

9.4 READING COMPREHENSION

The third sub-question asked was, what impact does the COI appear to have on students’ reading comprehension? This section discusses the degree of influence on reading comprehension given that previous research shows that improving skills of self-regulation is related to reading achievement (Howse et al., 2003), while improved self-efficacy beliefs and social-emotional skills result in higher reading outcomes for lower achievers (Ashdown & Bernard, 2012). This study investigated the benefits of COI participation on reading comprehension skill. This particular skill formed a measure of academic change in these students, and was selected because reading comprehension is fundamental in learning and of vital importance for students to provide full engagement across the curriculum (Florit & Cain, 2011). For further elaboration on reading comprehension refer to Section 2.1.4.
To ascertain changes in reading comprehension resulting from the COI metacognitive processes, the study used three formal approaches, namely, the Neale Analysis of Reading Ability (Neale, 1999), the Waddington Diagnostic Reading Test (Waddington, 2000) and the PM Benchmark test (Smith & Nelley, 2002). The study outcomes show that the COI interactive procedures, as well as the enhancement of ASE and SRL, have collectively played a role in influencing reading comprehension levels. The average improvement overall was 21 months reading age progression over the nine-month study.

These findings, suggesting that the COI appears to have impacted positively on reading comprehension, are consistent with the findings of Baker and Gerston (2002), who found that interactive dialogue between students and teachers was a means of improving reading comprehension. The impact of the COI approach on reading is supported by Bruce and Robinson (2004), whose research shows the positive effect of metacognitive functioning when children are experiencing reading difficulty. Similarly Jenkins and Lyle (2010) found the COI procedures had a positive impact on developing students’ reading skills. The findings indicate, therefore, that the COI may have a positive impact on the reading comprehension skills of students with learning difficulties. This researcher considers it likely that classroom teaching practice, over the period of the study, will also have made a contribution toward the results. Additionally, maturation in the students may have similarly influenced reading outcomes. Nevertheless, the individuals in the study group, all of whom exhibited low reading levels prior to the research project, have increased their reading levels substantially following their engagement with COI. In summary, there is considerable evidence of improved reading comprehension in the six participating students following the nine-month experience of the COI. These findings indicate that the COI seems to have generated a positive impact on reading comprehension for these students with learning difficulties.

9.5 THE COMMUNITY OF INQUIRY AND CHILDREN WITH LEARNING DIFFICULTIES

The main research question asked, what impact does participating in the COI process appear to have on students with learning difficulties? This key question in the study focused on the overall impact of the COI on the functioning of students with learning difficulties. Across the period of the COI program, the students generally made
moderate to substantial growth in developing their SRL skills, their sense of academic ASE, and their reading comprehension skills. There were, however, a few instances of no observable change or minimal change in some of the subcomponents of these three domains.

With regard to SRL, there was positive development for all students in relation to forethought, control, and monitoring. Results for reflection were less substantial but nevertheless positive. These results imply that engaging with the COI has cognitive benefits for children with learning difficulties. In relation to ASE, the study investigated four influences—success, observational comparison, feedback and physiological state. These four influences are comprised of 10 components in total. Across all components, there were only two occasions when a student showed no change in a component. In each case the student showed positive outcomes across the remaining components and influences of ASE. As a result, it was concluded that the students’ development was generally positive with regard to ASE. In relation to academic attainment it was concluded that there had been a positive impact from the COI on reading comprehension skills for all students.

The students’ reading comprehension scores in terms of reading age all indicated a gain of more than the nine months of the study, which could have been expected as a result of maturation across the period of the COI implementation. Although there was consistent development following the program, the natural classroom setting necessitated minimal control over some variables. Because this was not a controlled experiment, the outcomes cannot be directly attributed to the COI. The naturalistic context of the COI setting and the subjective nature of the data made it difficult to clearly link changes to the COI. Other factors such as maturation, and regular classroom lessons, may have affected student development over the study time-frame. There are, nonetheless, implications for an association between the COI and the student progress. These implications are described in the following paragraphs. Over the nine-month duration of the COI implementation in a Year 4 classroom, the six participating students appeared to make noticeable and worthwhile gains in SRL, ASE, and reading comprehension. Analysis of the data seemed to indicate an association between the COI lessons and changes in skill levels for the participating children with learning difficulties. Two areas of observation and monitoring supported this association.
First, the COS provided ongoing data on week by week progressions and changes in student participation. The COS recorded data on student development throughout the program. These records included data from observations of the COI lessons, as well as anecdotal classroom records including the student learning logs. During the COI lessons the teacher made notes, recorded on an “observation spreadsheet”, relating to the frequency and quality of students’ verbal participation. Student responses were assessed for reasoning on a three-level scale—low, average or high. The following example is a summary of the records made for Corby’s pre- and post-COI participation:

Across the first 7 weeks of the program Corby made 12 contributions rated low to average for reasoning. Across the final 7 weeks of the program Corby made 22 contributions rated average to high for reasoning.

Corby’s increased positive change in both contributing and reasoning, was similar in the other participants, and suggested a positive impact from the COI, although not all results were as advanced as Corby’s. The participant group, in total, made 94 low to average pre-COI contributions and 176 average to high post-COI contributions, indicating improved thinking and increased confidence.

Second, the COS data indicated any significant behavioural factors, for example confidence, enthusiasm, and engagement in the dialogue. Reviews of video footage supported analysis of social interaction. The following report describes Emma’s post-COI participation.

Emma is having greater input with sound reasoning in the COI sessions, and seems to have quite positive perceptions regarding her abilities. She is making a more independent effort, and is motivated at most times (post-COI collaborative observations synopsis).

Hence, an association between the COI and Emma’s progress is evident. Video footage was also reviewed to monitor verbal contributions in terms of language usage, changing levels of articulation, confidence, and enthusiasm levels. The following excerpt from a post-COI video transcript, for Emma, on well-being, also showed positive body language.

I think that it is healthy to be happy. If you are happy it goes to your mind and helps when you are with friends or at sport (at play).
The video replays showed changes in speaking confidence during the study and this student’s belief in her own reasoning skill, further supporting an association between the COI and learning outcomes. The video reviews also complemented the learning log data, providing a wider analysis of changing attitudes and beliefs.

A possible further indication of the impact of the COI is that it appears that students with learning difficulties, across schools generally, make little progress in years four and five. National testing in Australian schools indicates that low achieving students in the middle primary school made minimal progress in both literacy and numeracy with many regressing during years four and five (NAPLAN, 2012). Evidence from this study suggests that a whole class program can develop the skills of students with learning difficulties. The six participants all made positive progress in learning skills, and in particular reading comprehension, thus suggesting that the COI approach has the capacity to impact positively on the skill development of students with learning difficulties.

Findings from the sub-questions indicate consistent growth relating to SRL, ASE and reading comprehension for the six students in the study. There have been many studies on the benefits of participation in interactive dialogue in the classroom, and many more on the importance of SRL, ASE and reading comprehension skills for student performance. Few studies, however, have investigated the potential of the COI for enhancing these three abilities in children with learning difficulties. Although some of their gains were minimal, it is important to note that these six children all achieved some level of growth in the three domains investigated. Accordingly, it can be concluded that a nine-month period of engagement with the COI has had a positive impact on the functioning of the six students with learning difficulties participating in this research.

9.6 CHAPTER SUMMARY

In this study, a social-cognitive teaching method, the COI, was implemented within a regular classroom to investigate its impact on the functioning of students experiencing learning difficulties. It has been claimed that COI can build self-regulatory abilities in learning and enhance self-belief thus providing students with the confidence needed to take greater control of the learning process (Cam, 2006). The COI also appears to improve reading comprehension.
Self-regulated learning was discussed in terms of the model developed by Pintrich (2000), which is similar to most other models (Borkowski & Thorpe, 1994; Zimmerman, 2000). The four phases of SRL are forethought, control, monitoring, and reflection. The key findings emerging from the results of the study largely relate to the development of strategic thinking and growth in metacognition. The study’s findings across all of the four SRL phases showed positive results with increasing metacognitive activation resulting from the “thinking” processes of the COI approach. The literature supported the hypothesis that the procedures encountered in the COI assist in developing thinking strategies in children with learning difficulties. There are few studies connecting the COI benefits to students with learning difficulties and the results in this study, showing positive outcomes for the participant group in all four phases of SRL, is of relevance for the teaching profession.

The key findings relating to ASE focused on changing levels of self-belief associated with ASE within the four main influences. These are success, observational comparison, feedback and physiological state, identified in Bandura’s (1977) social-cognitive theory as being fundamental in an individual’s development of self-efficacy beliefs. The findings for ASE underlined the importance of self-belief in the process of building perceptions of success. They support previous studies investigating the role that social-cognitive approaches play in building confidence and self-esteem and enhanced perceptions regarding one’s ability to succeed in learning. The key issue emerging from the findings for this study is the role that the COI has played in building confidence and self-belief in students with learning difficulties. The combined influences of success, observational comparison and feedback have all played a role in shaping a key indicator of any child’s enjoyment of school, namely, physiological state. There was, however, little evidence of goal-setting improvement in the study participants. For the participating children in this investigation, the findings indicate that the positive stimulus of the COI has helped to alleviate the emotional hurdles for these students with learning difficulties and has built on their academic self-efficacy.

The findings for growth in reading comprehension provided evidence that the skills of the students increased beyond what might have been expected developmentally during the period of time over which the study was conducted. The
students on average made 21 months reading age improvement, whereas the period of the study was nine months. Other children in the class may also have gained in reading skills, however, such data was not collected for every student. The findings indicated that the COI appears to have impacted positively on reading comprehension for these students with learning difficulties. The study’s broad focus was on ascertaining whether the COI might have an impact on the academic functioning of students with learning difficulties, specifically in relation to SRL, ASE and reading comprehension abilities. Although some of the gains were minimal, it is important to note that these students all moved ahead to some degree in each of the three elements investigated. It seems likely, therefore, that the COI has had a positive impact on the academic functioning of the six students with learning difficulties participating in this study.
Chapter 10: Conclusions

The aim of this study was to investigate the impact of a social-cognitive teaching method, the community of inquiry (COI), on the academic functioning of children who experience learning difficulties. Findings indicated that, in general, the students made progress in their ability to self-regulate their learning. They also demonstrated positive changes in perceptions of their academic self-efficacy (ASE), as observed and self-reported. In addition, the students’ reading comprehension abilities also improved over the period in which they engaged with the COI. Conclusions are made in relation to the impact of the COI on self-regulated learning (Section 10.1), academic self-efficacy (Section 10.2), and reading comprehension (Section 10.3). The limitations of this study are described (Section 10.4), as well as future research (Section 10.5) and implications for teaching practice (Section 10.6).

10.1 SELF-REGULATED LEARNING

This section addresses the first sub-question relating to SRL. It provides an evaluation of any strengthening in the SRL skills of students with learning difficulties after a nine-month period of engagement with the COI. Before participating in COI sessions, the students presented with low achievement in literacy. The findings of the study indicated a general improvement in the students’ literacy skills by the conclusion of the study.

At the beginning, the students were achieving at a low level and struggling with much of their schoolwork. Their difficulties in evaluating and monitoring their learning performance resulted in minimal use of strategies. After several months of engaging with COI in a supportive learning environment, the students gradually became more engaged in interactive dialogue about issues that were relevant and pertinent to their daily lives. More importantly, this engagement was in partnership with their peer group, in whose company they felt supported; thus these students with learning difficulties grew more confident about articulating their understandings and voicing their questions. Ongoing observations of the six students conducted collaboratively by the classroom teacher and the researcher revealed a strengthening of reasoning skills, questioning ability, and even intellectual risk-taking in the
supportive COI setting. The emphasis on open-ended questions developed metacognitive awareness, including greater self-monitoring, self-evaluation, and use of strategies (e.g., selecting alternative means to solve a problem).

Following the COI process, observations confirmed growth for all students. There was increasingly meaningful thinking and self-direction in their learning, which also transferred to other classroom activities. Skill usage in other subjects was confirmed by reports from the classroom teacher. Change in SRL attributes was not an evenly spread development over the six participants. There were obvious differences in the rate of development, and it is also possible that maturation was a factor in both the differences and in overall development. However, whether the growth was minimal or substantial, the direction of change was positive. To become a more self-regulated learner, even to a moderate extent, was a positive outcome from this study.

Anecdotal and other collaborative observations recorded over the duration of the program indicated positive evidence of an overall shift toward self-regulated learning. Findings from all three measures used for gathering data to measure the impact of the COI on SRL (i.e., interviews, think-alouds and observations) confirm the students’ development of SRL over the period of the COI sessions. The key findings from the post-COI data collection, relating to SRL, indicated an enhancement of SRL with no indication of performance deterioration across any of the four phases of SRL—forethought, control, monitoring, and reflection. The findings also supported previous research indicating that the enhancement of metacognitive skills impacts positively on SRL. Taken as a whole, there are indications that the six children have made positive gains in SRL ability. It appears that these changes were influenced positively by the COI experience although other variables including maturation may have contributed.

10.2 ACADEMIC SELF-EFFICACY

This section addresses the second sub-question pertaining to ASE intervention for students with learning difficulties. Students with learning difficulties tend to have low academic self-efficacy, or, belief in their own competence to perform a task. This can result in reduced persistence and feelings of incompetence (Westwood, 2004). The COI sessions provided a supportive earning and social environment in
which the students were able to observe others and receive appropriate feedback on their ideas. Over time, the students began to develop a greater belief in their abilities to succeed. As discussed earlier, there is evidence to demonstrate that children who have adequate social-emotional skills are more likely to be successful academically, better adjusted, and enjoy higher levels of self-esteem and self-confidence (Elksnin & Elksnin, 2004). The findings of this study indicated that participation in COI appeared to have a positive impact on the students’ perceptions relating to ASE. Across all four factors, theorised to influence self-efficacy—success, observation, feedback, and physiological state (Bandura, 1977)—the findings indicated positive progression.

For success, the changes that occurred in the students’ self-belief over the duration of the COI implementation were demonstrated by an enhancement of each individual’s perception that they were capable of achieving and that they could succeed with sustained effort. Most of the participant group showed development in self-belief in the post-COI findings, while observations and video footage confirmed progression in both perceptions of success-capability and persistence. These findings suggest that the COI has impacted positively on these students by helping them to believe that they can be successful learners. This belief seemed to generate a higher level of persistence.

Observation of others was also important. The students were able to observe and experience the thinking of others, and each child could measure their abilities against the skills of their peers, while learning from them. For the six students in the study, observing others proved to be a positive influence on ASE. There was a positive impact on self-perception relating to learning. This impact stemmed from the slow but steady acquisition of skills along with social acceptance within the COI discussions. Data collected in the SRL component also indicated increased motivation levels in the study group. Across evaluations of ASE outcomes, the evidence suggests that observation played a role in building student self-perceptions, motivation, and skill development.

The influence of feedback on the students was not dissimilar to the effects of observational comparison. While observation nurtured belief in achievement, feedback nurtured skill awareness, which seemed to build on the students’ self-perceptions and potentially on ASE. Although the students’ responses indicated a
growing awareness of their improved skills, the students demonstrated limited
evidence of adjusting their goals. The overall trend for the six students has been a
growth in the self-confidence they have in their developing abilities. Therefore,
feedback from both their peer group and teachers seems to have had a positive
impact on motivation and been of benefit to these students.

There are positive indications that the combined impact of the first three
influences on academic self-efficacy (i.e., success, observation, feedback) helped in
shaping the students’ physiological state, that is their confidence and enthusiasm.
The students’ perceptions, derived from observational comparisons and feedback,
appeared to assist them in developing a belief that they were capable of achievement,
and their confidence and enthusiasm increased accordingly.

The findings for physiological state confirm an emerging pattern of confidence
possibly stemming from the students’ engagement with COI. The COI sessions
appear to have had a positive impact on the students’ perceptions of their ASE as
evidenced by their growth in academic confidence and self-belief. In the supportive
COI environment where the students engaged in scaffolded discussions of texts and
ideas, and their views were accepted, valued, and listened to, their self-confidence
has increased.

10.3 READING COMPREHENSION

This section addresses the third sub-question relating to reading comprehension. The
students’ reading comprehension abilities seem to have developed across the period
of the COI, likely due in part to the students’ scaffolded focus on the stimulus texts,
which necessitated composing and answering questions, deliberating on responses
(own and peers), engaging in follow-on writing activities, and evaluating their own
performance. All of these activities required the students to focus on meaning
derived from both their own world experiences as well from their growing
understanding of concepts.

All six students exhibited low reading levels prior to the beginning of the
study. Over the period of the COI sessions, all of the students demonstrated positive
growth in the development of their reading comprehension skills. Across all three
comprehension measures, the students’ results demonstrated a mean improvement of
approximately 21 months reading age over the nine-month duration of the study.
This improvement may be due at least in part to the students’ guided focus on stories, questions, reasoning and concept development, as well as their development of SRL strategies, as described in Section 10.1. Therefore, it seems that the COI has had a positive influence on reading comprehension.

In summary, the COI, as a whole class intervention strategy, appears to have had a positive impact on the functioning of the six Year 4 students who had been identified as having learning difficulties. The findings indicate that the students have become more self-regulated in their learning, they have developed greater academic self-efficacy, and their reading comprehension skills are stronger.

10.4 LIMITATIONS

This research project used a case study design to explore the impact of the COI in a natural context. This necessitated minimal control over the contextual conditions, consequently placing limitations on accurately interpreting changing beliefs and perceptions. To help compensate for this, the data collection methods were comprehensive, providing for triangulation in each focus area of the study; however, measuring how children’s cognitive abilities develop and how social-emotional perceptions change, was a complex task. The very nature of the challenge of helping young children to think in a more self-regulatory way and developing their self-efficacy beliefs was also complex. Some of the data collection methods relied on subjective judgements (e.g., COS). Nonetheless, by using a range of data collection methods to develop a rich understanding of the students’ development, a valid assessment of the students’ progress was attained.

To assist in validating this assessment, findings were scrutinised by the class teacher and support teacher for students with learning difficulties (see Section 3.3.2). This process involved pre- and post-COI auditing of the researcher’s data and corroboration of the evaluations by the classroom teacher and a support teacher for children with learning difficulties. A collaborative comment was compiled and recorded in the assessment column of the response record (Appendix B).

There were also limitations as a result of the age and literacy levels of the students. In the early months of the study, the students’ expressive writing abilities were limited and any written responses produced by the participating children (e.g.,
in their learning logs) required assistance. The provision of assistance may have limited their spontaneity and to some extent affected what they wished to write.

10.5 FUTURE RESEARCH

Findings from the present study indicated that students with learning difficulties are able to benefit from engaging with COI, even when it is implemented as a whole class program. In addition to replicating this finding with other students with learning difficulties who are being supported in inclusive classrooms, there may be additional beneficial outcomes that warrant investigation. To explain, in implementing the present study, observations indicated that the level of engagement and participation of the students with learning difficulties, their expressive writing skills, and the frequency and quality of their social interactions, all improved.

With regard to the first observation, the students seemed to develop increased independence and a greater propensity for taking charge of their learning over the course of the COI. With regard to the second observation, the students’ confidence and ability to express their thinking in writing increased noticeably. In particular, the students’ learning log entries indicated substantial growth in both the quantity (length of entries) and quality (richness of vocabulary, complexity of sentences, and expression of personal meaning) of their writing. Finally, observations of the students’ functioning during COI sessions suggested increased frequency, greater spontaneity, and a more thoughtful approach in their social responses. Accordingly, it was concluded that the impact of COI on students’ development in these three domains—engagement and participation in learning, expressive writing, and social communication—all warrant further investigation.

During the implementation of this study, it became clear that all children, not only children with learning difficulties, appeared to have benefited from this social-cognitive teaching method in a variety of ways with thinking and reasoning skills being foremost. In the many consultations and discussions with the classroom teacher, especially during the latter phase of the project, it appeared that the skill development for all students had improved following the COI. Further, the students all seemed to show growth in the skills that were the subject of the study; namely, self-regulated learning, academic self-efficacy and reading comprehension.
An important objective of the COI, and its procedures of social interaction, is to foster greater understanding within the group and to develop a regard for others by teaching children to be fair minded, respectful and tolerant. Schools that have implemented the COI are finding that, in addition to improving academic attainment, classroom and playground behaviour has also improved (Millett & Tapper, 2012). Further research on behavioural factors across schools that have implemented the COI could clarify the apparent positive impacts of the program in relation to all students in regular classrooms, as well as those experiencing learning difficulties.

10.6 IMPLICATIONS FOR TEACHING PRACTICE

The present study indicates that all students appear to benefit from participating in the COI hence suggesting several important implications for teaching practice. Specifically, the program had a positive impact on the functioning of students with learning difficulties in relation to SRL, ASE, and reading comprehension. These positive impacts occurred when the program was implemented as a whole group activity within the regular classroom. The COI approach is an inclusive, social-cognitive teaching method and it appears to benefit all of the students, whatever their individual learning needs in the following ways.

First, the participation in interactive dialogue seems to develop metacognitive skills and self-regulatory behaviours, and all of the students appear to take more responsibility for their learning. Second, this whole-class teaching method indicated possible social-emotional benefits not exclusively for the students with learning difficulties. The students seemed to become more confident about their abilities to succeed at school, with increasing self-efficacy for learning. Third, reading comprehension was affected positively.

The COI teaching strategy has practical relevance to regular classroom practice because it can form an integral part of the oral language program. It may well provide a wider perspective on oral language through dialogue (discussion in the COI forum), reasoning, and questioning, hence broadening oral language skills. It is also inherently inclusive, being a whole class approach to learning. This has implications for intervention methods for children with learning difficulties perhaps providing an alternative to individualised instruction. Many current modes of learning support for students with learning difficulties require individual or small
group “withdrawal” methods. This may create the risk of these children perceiving themselves as having a “label”, and possibly developing a mindset of failure. The COI is an alternative approach to withdrawal methods of intervention, and seems to support the “whole” child in developing learning skills. The COI’s inclusive setting appears to help students with learning difficulties feel more comfortable because the environment of social acceptance is a setting conducive to having their views accepted, valued, and listened to. With the associated peer recognition and feedback, the COI seems to nurture confidence and motivation, as well as improving cognitive skills. These benefits apply to all of the students in a classroom, many of whom will have needs similar to those of children with learning difficulties. In this social learning setting, the children gain skills through interacting with and observing the skills of others. The guided, social interaction and intellectual exchange, appears to develop a range of learning skills, as well as nurturing confidence, which then seems to transfer to other areas of learning (Jenkins & Lyle, 2010).

To add more focus on the needs of the children with learning difficulties when implementing the COI in a regular classroom, the COI setting can be adjusted to enhance intervention effectiveness. Particular COI formats can benefit students who lack confidence and skills. For example, the Fishbowl, which comprises a small group in the middle of the class circle, can be modified to give students with learning difficulties opportunities to take centre stage. To support reading skills, students with learning difficulties can participate in shared reading of stimulus material, while topics from stimulus stories and questions can focus on interests of students with learning difficulties. Additionally, the procedural rule of respecting every speaker’s input gives the lower achievers a sense of equality. Equal opportunity to contribute is also enhanced by issuing each student a few “speaking vouchers”, thus giving all students, inclusive of those less capable, an equal number of participation opportunities. A small ball rolled from one speaker to the next can comprise a means of choice when selecting a respondent. When the students go to smaller groups for follow-up activities, the social groupings can be adapted to the advantage of students with learning difficulties to ensure their sense of involvement.

Addressing the needs of children with learning difficulties is one of Education’s major challenges. Therefore, this inclusive, whole-class social-learning
program, the COI, with the potential to enhance learning for all students including those with learning difficulties, should be of relevance to teachers and students.
References


*Analytic Teaching, 21*(2), 106-120.


Rohl, M., & Rivalland, J. (2002). Literacy learning difficulties in Australian primary schools: Who are the children identified and how do their schools and


## Appendices

### SELF-REGULATED LEARNING

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### ACADEMIC SELF-EFFICACY

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<td>Appendix F</td>
<td>Example of student work sheet</td>
</tr>
<tr>
<td>Appendix G</td>
<td>ASE results</td>
</tr>
<tr>
<td>Appendix H</td>
<td>ASE Collaborative observations synopsis</td>
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### READING COMPREHENSION

<table>
<thead>
<tr>
<th>Appendix</th>
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<tbody>
<tr>
<td>Appendix I</td>
<td>Neale analysis of reading ability</td>
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<td>Appendix J</td>
<td>Waddington diagnostic reading test</td>
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<td>Appendix K</td>
<td>PM Benchmark</td>
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</table>

### ADDITIONAL INFORMATION

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<td>Learning log - weekly entry</td>
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<td>Appendix M:</td>
<td>Learning log analysis</td>
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<td>Appendix N</td>
<td>Lesson topics for terms 1-4</td>
</tr>
<tr>
<td>Appendix O</td>
<td>Blackboard stimuli for the topic <em>Senses</em></td>
</tr>
</tbody>
</table>
Appendix A: Stimulus questions for semi-structured interview

The headings indicate which phase of SRL while the category of SRL category is presented in brackets.

FORETHOUGHT

- When you are starting a new school project, what do you do or think about to help you get started? [planning]

- What are some of the interesting things about schoolwork that help you to enjoy it? [task value/interest]

- If you are asked to do something that seems really difficult, how do you feel? [efficacy]

- When you get to work on an interesting task, do you like to know why you are doing it? [goal orientation]

MONITORING

- What are the things that make you want to work hard and do your best? [motivation]

- When you are doing something that’s quite hard, do you try to work out different ways of thinking about it and use different bits of information to help you? [metacognitive knowledge]

- If you are having trouble understanding the work you are doing, do you think of ways to change things to help you to understand it better? [task and context]

- Do you often think about the parts of your schoolwork that you don’t do very well and why you have trouble? [self-observation]

- When the work is getting hard to understand, do you ask for help straight away? [monitoring need for help]
- When you get confused or something goes wrong with the job you are doing, how do you go about fixing it? [self-correcting]

CONTROL
- When learning new work, do you use what you already know to help you? [strategy selection]
- How do you decide on the best way to go about a difficult task? [strategy selection]
- If you get stuck on a problem do you go back and try another way? [adapting strategies/alternatives]
- Do you like completing tasks on your own or do you prefer to get lots of help along the way? [locus of control]
- If the problem is not working out, do you like to keep on trying? [persistence]

REFLECTION
- What ways do you use to check your work? [evaluating]
- Some parts of your schoolwork are very hard. Do you sometimes wonder about how you can improve on them? [judgements]
- Do you ask yourself question to help you understand difficult tasks? [verbal self-instruction/monitoring]
- Who helps you to learn most – you, your classmates or the teacher? [attribution factors]
- When you have completed some work – it’s all done! How do you go about choosing the next thing to do? [Choice behaviour]
## Appendix B: SRL response record and assessment

<table>
<thead>
<tr>
<th>Phase</th>
<th>Strategy</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tr>
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<td>Choice behaviours</td>
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**Appendix C: Collaborative observations assessment for self-regulated learning**

**COLLABORATIVE OBSERVATIONS FOR SRL-Post-COI**

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<table>
<thead>
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<th>Component</th>
<th>Estimated development</th>
<th>Collaborative Observations Synopsis</th>
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<td></td>
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<td>1 2 3 4 5</td>
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</table>

**Forethought**

- Planning
  - Task value/interest
  - Efficacy judgement
  - Goal setting

**Monitoring**

- Motivation
  - Metacognitive awareness
  - Context
  - Experimentation
  - Self-observation
<table>
<thead>
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<td></td>
<td>Persistence</td>
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<tr>
<td>Reflection</td>
<td>Evaluation</td>
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<td>Self-judgement</td>
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<tr>
<td></td>
<td>Attribution factors</td>
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<td>Self - instruction</td>
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<td>Choice behaviours</td>
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</table>
Appendix D: Think-aloud analysis

THINK ALOUD ANALYSIS

“Great Lion and Tiny Mouse” Retold by Beverley Randell

Name:                Age:                 Date:           level: 16           Accuracy:          SC:
Words:   309

NARRATIVE   STUDENT RESPONSES and ASSESSMENT

Once upon a time there was a great lion. He liked sleeping in the sun. One day a tiny mouse went out to look for something to eat.
She did not see the lion and she ran across his paw. The lion woke up at once. He put his paw over the mouse. “Got you!” he said. The mouse could not get away. “Please don’t eat me!” she cried. “If you let me go then I could help you one day.”

PREPARATION:
The lion looked down at the mouse. “Ha! Ha! Ha! He laughed. A tiny mouse like you couldn’t help a great lion like me! But I will let you go.” He lifted his paw and the tiny mouse ran away. The next night the lion went out hunting. Some men were waiting to catch him. They got him in a net. They tied the net to a tree and pulled it up off the ground. Then they went away and left him there.

FIRST BREAK:

SECOND BREAK

SECOND BREAK
The lion roared. “Help me! I cannot get out! Help! He called. “I can hear the lion roaring.” said the mouse to herself. She hurried to find him. When the mouse came to the tree, she found the lion. He was swinging in a net above her. “It’s my turn to help you now,” she said. “But how can you help me?” said the lion. “you are much too small.”

I may be small,” said the little mouse, “but I have sharp teeth. I can make a hole in that net. Just watch me!” The mouse jumped up onto the net. She began to nibble at the ropes. She nibbled and nibbled until at last the lion could get out. “Thank you very much,” said the lion. “You were right after all. A tiny mouse like you could help a great lion like me”.

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Appendix E: Interactive student questionnaire for academic self-efficacy

Includes:

10 statements pertaining to success [S]
7 statements pertaining to observation [O]
5 statements pertaining to feedback [F]
8 statements pertaining to physiological state or well-being [P]

R Indicates a reverse question: A positive (agree) response will be interpreted as negative (disagree) in terms of self-efficacy for the question’s subject matter.

1. Sometimes I think the work is easy when the other kids think it’s hard [P]
2. I am one of the best students in my class [O]
3. I usually understand how to do my homework [S]
4. I usually get my maths wrong because I think it is too hard [S] R
5. I am good at writing stories [S]
6. If I worked a bit harder, I could get the best marks in the class [[S]
7. It’s good when the bell goes at 9 o’clock and we can start our school work [P]
8. Some kids get better marks than me but they get help from the teacher [O] R
9. I am quite smart [P]
10. I like answering questions in class because I usually know the answer [S]
11. When I am reading I give up easily if I don’t know what a word means [P] R
12. Most of the other children like maths because they find it easy [O] R
13. I’m sure I’ll do well at high school [S]
14. I think this school has all the things you need for learning [O]
15. No one really cares about how well I do in school [F]R
16. Teachers like children even the ones who don’t get don’t get good marks [O]
17. Most of my classmates work harder than I do [O] R
18. People in my family think I am a good at schoolwork. [F]
19. I enjoy working hard and learning new things [P]
20. I always get good marks when I try hard [S]
21. My teacher thinks I am smart [F]
22. My classmates usually get better marks than I do [O] R
23. My friends think I am a hard worker [F]
24. I like standing in front of the class and talking about thing I have done [P]
25. I am not a very good reader [S] R
26. I stop reading if I can’t work out how to say a word [P] R
27. What I learn at school is not that important [P] R
28. I am good at maths [S]
29. My friends think that I am good at schoolwork and often ask me for help [F]
30. I think that I work hard and it makes me feel good [P]
Appendix F: Example of student worksheet:

1. Sometimes I think the work is easy even if the other kids think it's hard.

2. I am one of the best students in my class.

3. I usually understand how to do my homework.

4. I usually get my maths wrong because I think it's too hard.

5. I am good at writing stories.
## Appendix G: Results for academic self-efficacy

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<thead>
<tr>
<th>Focus Area</th>
<th>Brady</th>
<th>Corby</th>
<th>Emma</th>
<th>Brendan</th>
<th>Anna</th>
<th>Darren</th>
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<tbody>
<tr>
<td>Pre/post COI</td>
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<td></td>
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</table>

**Note:** E = Extrinsic motivation; S = Skill awareness and goal adjustment
### Appendix H: Collaborative observations synopsis for academic self-efficacy

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<th>COLLABORATIVE OBSERVATIONS FOR ASE</th>
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</tr>
<tr>
<td>Success</td>
</tr>
<tr>
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</tr>
<tr>
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<tr>
<td>Observational comparison</td>
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<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Social feedback</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td>Physiological state</td>
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</table>
## Appendix I: Neale Analysis of Reading Ability (Neale, 1999)

**NEALE ANALYSIS SUMMARY FORM**

Neale Analysis of Reading Ability (3rd ed.)

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<th>Name:</th>
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<th>Grade:</th>
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<table>
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<th>Age:</th>
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<table>
<thead>
<tr>
<th>Test Administrator:</th>
<th>Class Teacher:</th>
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</table>

### RAW SCORE SUMMARY:

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<tr>
<th>PASSAGE</th>
<th>ACCURACY</th>
<th>COMPREHENSION</th>
<th>WORD COUNT</th>
<th>TIME [seconds]</th>
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<tr>
<td></td>
<td>Max. Errors Score</td>
<td>Correct answers</td>
<td>Number Total</td>
<td></td>
</tr>
</tbody>
</table>

- **Level 1**
  - "Kitten"
  - 16 -

- **Level 2**
  - "Surprise Parcel"
  - 16 -

- **Level 3**
  - "Circus"
  - 16 -

- **Level 4**
  - "Dragon"
  - 16 - =

**Rate** = \( \frac{\text{words read}}{\text{time} \times 60} \)

**Total Time:**

**TOTAL RAW SCORES**

Accuracy = Comprehension = Rate =

**STANDARDISED SCORE SUMMARY:**
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<th>Percentile Rank</th>
<th>Stanine Performance Descriptor</th>
<th>National Profile Level</th>
<th>Reading Age [years]</th>
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</table>

**ACCURACY**

**COMPREHENSION**

**RATE**

Summary and Recommendations:
Current reading age approximately
## Appendix J: Waddington Diagnostic Reading Test (Waddington, 2000)

### READING TEST SCORES

Waddington Diagnostic Reading Test: (2nd ed.)

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RAW SCORE = 

READING AGE =


Appendix K: PM Benchmark Assessment (Smith & Nelley, 2002)

READING ASSESSMENT SCORE

[See PM Benchmarking recording proforma in student file for details]

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<tbody>
<tr>
<td>NAME:</td>
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<tr>
<td>PM Benchmark Level</td>
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</tbody>
</table>

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## Appendix L: Learning log

**NAME:………………………….. DATE:………………………**

1. How do you feel about the way your schoolwork went this week?

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<thead>
<tr>
<th></th>
<th>Great</th>
<th>Good</th>
<th>Ok</th>
<th>Not that good</th>
</tr>
</thead>
</table>

Give a reason:.............................................................................................................

2. How much of your work was completed correctly?

<table>
<thead>
<tr>
<th></th>
<th>All of it</th>
<th>Most of it</th>
<th>Some of it</th>
<th>Not much</th>
</tr>
</thead>
</table>

Can you say why?........................................................................................................

3. Did the ‘TALK & THINK’ lesson this week go well for you?

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>OK</th>
<th>Didn’t like it</th>
</tr>
</thead>
</table>

What parts did you like?

4. Did you learn some good things this week?....................................................... 

<table>
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<tr>
<th></th>
<th>Heaps</th>
<th>Quite a bit</th>
<th>Some</th>
<th>Very little</th>
</tr>
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</table>

Write down something really useful that you learned...........................................

5. Say one more thing about school this week.....................................................
### Appendix M: Learning log analysis

#### LEARNING LOG & INTERVIEW ANALYSIS

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### Appendix N: Lesson topics for terms 1-4

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|   |                                                                 |                                                                 |                                                                 |
|---|----------------------------------------------------------------|----------------------------------------------------------------|                                                                 |
| 1 | Senses                                                         | “Dreaming in Words”                                             | Books and Stories                                              |
| 2 | Notion of time                                                | “Clocks and More Clocks”                                        | Thinking and the mind                                           |
| 3 | Feeling happy &amp; safe                                          | “Earthquake”                                                    | Personal development                                           |
| 4 | Secrets                                                        | “The Secret”                                                    |                                                                 |
| 5 | Your joking                                                    | “Clean Cuts”                                                    | Barrier game                                                   |</p>
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Appendix O: Blackboard stimuli for the topic *Senses*
What are our senses?
2. Can we get by without any of them?
3. Could we still learn without our hearing or sight?
4. Can blind people still be happy?
5. If a person blind since birth has dreams, are they picture dreams?
6. Do plants have senses?
7. Are dog senses the same as human senses?