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**Teacher Perspectives on Self-Regulated Learning (SRL) Implementation and Reading
Comprehension**

Submitted by

Daniella Taranto

BPsychSc, MTeach (Primary)

A thesis submitted in fulfillment of the requirements of the degree of
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Faculty of Education and Arts

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Declaration

This thesis contains no material that has been extracted in whole or in part from a thesis that I have submitted towards the award of any other degree or diploma in any other tertiary institution. No other person's work has been used without due acknowledgment in the main text of the thesis. All research procedures reported in the thesis received the approval of the relevant Ethics/Safety Committees (where required).

Signed:

A solid black rectangular box used to redact the signature of the author.

Daniella Taranto

21 May, 2023

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Contents

Declaration	ii
Acknowledgements	iii
List of Tables	viii
List of Figures	ix
Abstract	x
List of Key Terms	xii
List of Abbreviations	xiv
Chapter 1. Background and Context	1
History and Background of Self-Regulated Learning (SRL) Theory	3
History and Background of Reading Comprehension	6
The Research Problem and Justification of the Research	9
SRL Implementation	10
Professional Expertise in SRL Implementation.....	11
SRL Implementation and Reading Comprehension.....	12
The Research Purpose	14
The Research Aims	14
The Research question(s)	15
The Researcher’s Background	15
The Research Design.....	16
Philosophical Underpinning and Theoretical Perspective of the Research.....	16
Methodology	17
Participants	18
Data Collection	19
Data Analysis	19
Research Limitations.....	20
The Significance of the Research	21
Structure of Thesis	22
Conclusion	24
Chapter 2. Literature Review	26
Self-Regulated Learning (SRL) Theory.....	27
Goal-Directed Behaviour	29
Strategic Behaviour.....	29
Self-Reflection	30
Belief Systems	31
Summary of SRL Theory	31

SRL Implementation	32
Epistemological Beliefs.....	33
Student Readiness	35
SRL Strategy Instruction	37
Teacher Professional Development	39
Summary of SRL implementation	42
SRL and Reading Comprehension.....	43
Reading Habits.....	43
Strategy Use.....	45
SRL Phases	47
Summary of SRL Implementation and Reading Comprehension	49
Conclusion.....	50
Chapter 3. Research Design.....	53
The Research Aims	54
The Research question(s)	54
Philosophical Underpinning of the Research	55
Ontological Foundations	55
Epistemological Foundations	56
Constructivism	57
Theoretical Perspective	57
Interpretivism.....	58
Symbolic Interactionism.....	59
Methodology.....	59
Data Collection	61
Unstructured interviews	62
Participant Selection.....	63
Research Ethics.....	64
Conducting the interviews.....	66
Transcribing interviews.....	67
Storage and Safety of the Data Collected.....	68
Data Analysis.....	68
The Emergence of Categories.....	69
The Emerging Findings	70
Further Analysis of the Data.....	71
Trustworthiness.....	72
Credibility.....	72

Transferability.....	73
Dependability.....	74
Confirmability.....	74
Limitations and Delimitations of the Research	75
Conclusion.....	76
Chapter 4. Findings Related to Category One: SRL Professional Development.....	78
Category One: SRL Professional Development	80
Training Events.....	80
Team Teaching	82
Teacher Coaching	83
Overview of The Emerging Findings of Category One	84
Discussion and Further Analysis of Category One.....	85
SRL Content Knowledge.....	86
SRL Pedagogical Content Knowledge.....	88
Knowledge of Performing SRL	91
Overview of the Further Analysis of Category One	94
Conclusion and Summary of Findings Relevant to Category One.....	97
Chapter 5. Findings Related to Category Two: Preparing Students for Effective SRL Strategies and Phases.....	99
Category Two: Preparing Students for Effective SRL Strategies and Phases	100
Developing Students' Conceptual Understanding of SRL.....	100
Addressing Students' Beliefs About the Nature of Knowledge and Learning.....	103
Promoting the Relevance and Importance of SRL	105
Overview of the Emerging Findings of Category Two.....	106
Discussion and Further Analysis of Category Two	107
Conceptual Knowledge	107
Sophisticated Epistemological Beliefs.....	110
Personal Relevance	112
Overview of the Further Analysis of Category Two.....	114
Conclusion and Summary of Findings Relevant to Category Two	116
Chapter 6. Findings Related to Category Three: SRL Phases and Reading Comprehension	118
Category Three: SRL Phases and Reading Comprehension	119
The Forethought Phase and Reading Habits	119
The Performance Phase and Group Dialogue.....	122
The Self-Reflection Phase and Individual Learning	124

Overview of The Emerging Findings of Category Three	125
A Discussion and Further Analysis of Category Three	126
Epistemological Beliefs about Reading	126
Social Interactions and Critical Thinking.....	129
Knowledge Consolidation and Individual Agency.....	132
Overview of a Further Analysis of Category Three.....	134
Conclusion.....	137
Chapter 7. Implications and Recommendations.....	139
Purpose and Context of the Research.....	139
The Research Questions	141
Theoretical Proposition 1	142
Theoretical Proposition 2	144
Theoretical Proposition 3	145
Overview	147
Implication 1: SRL-Focused PD.....	150
Implication 2: Identification and Development of Student Readiness for SRL.....	152
Implication 3: Zimmerman’s (2000) Phases of SRL and Reading Comprehension.....	153
Research Limitations.....	155
Concluding Remarks.....	158
References	160
Appendix A Principal Information Letter	213
Appendix B Principal Permission Letter	219
Appendix C Participant Information Letter.....	220
Appendix D Participant Consent Form	226
Appendix E Interview Protocol	227
Appendix F Category Table for Data Analysis.....	229
Appendix G Example of Completed Table for Data Analysis.....	230

List of Tables

Table 1 <i>The Methodological Approach</i>	54
Table 2 <i>Categories and Subcategories That Emerged From the Study</i>	78

List of Figures

Figure 1 <i>Literature Review - A Conceptual Diagram</i>	27
Figure 2 <i>Cyclical Phases and Sub-Processes of SRL (Zimmerman, 2000)</i>	28
Figure 3 <i>Category One: Category and Subcategories</i>	79
Figure 4 <i>Overview of the Further Analysis of Category One</i>	97
Figure 5 <i>Category Two: Category and Subcategories</i>	100
Figure 6 <i>Overview of the Further Analysis of Category Two</i>	116
Figure 7 <i>Category Three: Category and Subcategories</i>	119
Figure 8 <i>Overview of the Further Analysis of Category Three</i>	135
Figure 9 <i>A Conceptual Model for Effective SRL Implementation and Reading Comprehension: The Lyceum Model</i>	148

Abstract

Self-Regulated Learning (SRL) is widely recognised as an indispensable aspect of academic success and lifelong learning (Taranto & Buchanan, 2020). This has led to a notable upsurge in implementing SRL principles into formal education as early as primary school (Alvi & Gillies, 2020; Perry et al., 2018). Specifically, in literacy education, researchers have emphasised the close relationship between SRL processes and reading comprehension (Cirino et al., 2017; Kuzmina & Glazunova, 2021; Schaffner et al., 2021). However, the effective implementation of SRL in primary school classroom settings is an emerging area of research that has only begun in recent years. Exploring how teachers understand SRL implementation is crucial to inform curriculum design, pedagogy, and research in this area (De Smul et al., 2020; Harding et al., 2019; Peel, 2020). To this end, the research project presented in this thesis aimed to explore Grades 5 and 6 primary school teachers' perspectives on effective SRL implementation, particularly in the context of reading comprehension. The study was conducted in a Catholic primary school in Victoria, Australia, using an integrated SRL approach to teaching and learning. Unstructured interviews were utilised to capture the participants' perspectives. The principles of Classic Grounded Theory (Glaser & Strauss, 1967) were employed to identify, conceptualise and analyse the participants' understanding of effective SRL implementation and reading comprehension.

The findings indicated that the teachers in this study considered a combination of approaches to SRL-focused professional development (PD) as vital for developing the professional expertise necessary for successfully implementing SRL in Grades 5 and 6 classrooms. The study underscored the significance of SRL content knowledge, SRL pedagogical content knowledge, and knowledge of SRL performance for teachers to feel prepared and equipped to implement SRL effectively. The findings also highlighted the

importance of building student readiness for SRL based on constructivist principles, such as students' conceptual understanding of SRL, epistemological beliefs, and personal relevance to SRL. The study further provided insights into the role of reading-specific epistemological beliefs and social interactions in developing students' SRL skills in the context of reading comprehension. Based on the research findings, a substantive conceptual model, the Lyceum Model, was formed, encapsulating effective SRL implementation and reading comprehension as perceived by teachers in Grades 5 and 6. This model offers a comprehensive philosophical platform and operational structure for SRL implementation and reading comprehension in the primary school sector.

List of Key Terms

Self-Regulated Learning (SRL) refers to the ability of individuals to independently manage and control their cognitive, metacognitive, and motivational processes during the learning process (Zimmerman, 2000). It involves setting goals, monitoring progress, and adapting strategies to achieve optimal learning outcomes.

SRL Implementation involves the application and integration of self-regulated learning strategies and principles into educational practices, curriculum, or instructional design (De Smul et al., 2020). It focuses on fostering students' ability to take charge of their learning processes.

Professional Development encompasses activities and initiatives that aim to enhance the knowledge, skills, and expertise of educators (Buczynski & Hansen, 2010). It is a process designed to keep teachers updated on current educational trends, methodologies, and technologies.

SRL Content Knowledge refers to educators' understanding of the principles, theories, and research related to self-regulated learning (Karlen et al., 2020).

SRL Pedagogical Content Knowledge represents the specialized knowledge that educators possess about how to teach self-regulated learning effectively (Karlen et al., 2020). It involves the ability to translate theoretical knowledge about SRL into practical and applicable teaching strategies.

Reading Comprehension is the ability to understand, interpret, and extract meaning from written text (Snow, 2002). It involves a combination of decoding words, understanding vocabulary, and making inferences to comprehend the overall message.

Self-Efficacy refers to an individual's belief in their ability to successfully perform a specific task or accomplish a particular goal (Bandura, 1997). In the context of student learning, self-efficacy refers to a student's belief in their own capability to successfully complete tasks, solve problems, and achieve academic goals (Lent et al., 2019).

Strategic Behavior in education refers to purposeful and intentional actions taken by students or teachers to achieve specific learning objectives (Butler & Winne, 1995). It involves the thoughtful application of strategies and approaches to optimize the learning process.

List of Abbreviations

ACU	Australian Catholic University
CEO	Catholic Education Office
CGT	Classic Grounded Theory
PD	Professional Development
SRL	Self-Regulated Learning

Chapter 1.

Background and Context

Self-Regulated Learning (SRL) is a cognitive process whereby learners actively manage and regulate their thinking, actions, and environment to achieve individualised goals (Zimmerman, 2000). SRL is based on developing student expertise in the learning process and consequently provides students with mastery over lifelong learning skills (Clearly, 2018). Thus, SRL aims to provide learners with a repertoire of techniques and strategies to foster independent learning across any field, discipline, or learning pursuit (Zimmerman, 2013; Panadero, 2017). With this in mind, different aspects of SRL have been tested in a range of subject domains and linked to developing various skill sets. Specifically, in literacy, researchers have emphasised how SRL processes are closely intertwined with competencies in reading comprehension (Cirino et al., 2017; Kuzmina & Glazunova, 2021; Schaffner et al., 2021).

Reading comprehension has been identified as a significant concern for upper primary school students in Australia, as evidenced by international and national assessments (Ainley et al., 2022; Hillman et al., 2023; Thomas et al., 2022). Issues with reading comprehension are not confined to Australia alone. They should be considered a vital global pursuit, particularly in the 21st century, where new reading modes and various technological factors have come to the fore (Lee, 2001; Ng & Graham, 2017). In today's rapidly evolving technological landscape, reading continues to be recognised as more than just a fundamental skill. It has evolved into a complex and multi-dimensional process that demands critical thinking and SRL abilities (Coiro & Dobler, 2007; Chan & Unsworth, 2011; Hulme & Snowling, 2011). Focusing on teacher perspectives on student learning of SRL can support the development of the reading curriculum in a manner that caters to the

enhancement of individual skills and traits that align with the literacy requirements of the present era (Ng & Graham, 2017).

Due to the evident influence of SRL on learner outcomes, there has been an increasing interest in the body of literature on the educational implementation of SRL in the classroom to support students' academic success (De Smul et al., 2018a; Cleary et al., 2022). However, regardless of the implemented SRL programs, the teacher's understanding of SRL and approach to its implementation significantly impact student learning (Gaines et al., 2019; Van Dyke et al., 2022). Despite the broader literature emphasising teachers' crucial role in SRL implementation, limited research has directly investigated how teachers understand the approaches associated with implementing SRL principles into authentic lessons (Deacon et al., 2020; Harding et al., 2019). This undertaking is significant due to the substantial interrelationship between SRL implementation and the role of teachers as essential stakeholders in educational policies and practices (Cleary et al., 2022; Schaffner et al., 2021).

This research project aimed to examine the perspectives of six Grades 5 and 6 primary teachers in one Catholic school in Victoria, Australia, as they engaged in SRL implementation to enhance the reading comprehension skills of their students. Chapter One presents an overview of the contextual background pertinent to the research area. This discussion aims to establish the necessary groundwork for a justification and rationale for the study, together with its respective aims and research questions. It also outlines the research design underpinning the study and the methodology used to collect and analyse the data. Finally, the chapter concludes with the study limitations, significance and a thesis structure outline.

History and Background of Self-Regulated Learning (SRL) Theory

SRL defines the process of developing control and autonomy over one's learning by independently planning, executing, and evaluating the learning process (Zimmerman, 1990). Zimmerman (2000) published the first model of SRL, consisting of the forethought, performance, and self-reflection phases. As a relatively new field in an ever-changing world and era requiring lifelong learning, the ability to self-regulate learning became increasingly important (Bryce et al., 2000). Approaches to SRL evolved, resulting in the formation of several models (Boekaerts, 1991; Boekaerts & Corno, 2005; Efklides, 2011; Pintrich, 1990, 2000; Winne & Hadwin, 2008; Zimmerman, 1986, 1989, 2000).

Certain aspects of SRL have been researched extensively, whereas other areas are lacking. The focus of research in this field to date has been developing and validating SRL models to explain the process of SRL (Panadero, 2017). Scholars have been testing different components of the developed models of SRL, such as the role of emotion, motivation, or metacognition in the process of SRL, to gain empirical evidence to test the validity of these models (Puustinen & Pulkkinen, 2001). Additionally, different aspects of SRL have been tested in various areas and linked to developing various skill sets and individual success both in and outside the classroom. For example, high SRL skills can predict success in developing athletic skills in sports such as dart throwing, basketball and volleyball (Cleary & Zimmerman, 2001; Kitsantas & Zimmerman, 2002; Panadero, 2017; Puustinen & Pulkkinen, 2001; Zimmerman, 2013). Also, high SRL skills can lead to more effective learning of second languages (Lin et al., 2017). Individuals with high SRL skills can also better regulate their emotions, reduce anxiety, and self-induce positive emotions, leading to an improved learning experience (Malekzadeh et al., 2015; Schlesiera et al., 2019).

Predominantly throughout the literature, students with proficient SRL skills display higher academic performance on curriculum learning tasks and academic testing (Callan & Cleary, 2018; Peel, 2020). Across curriculums, SRL enhances the connection between learning tasks and encourages a broader and deeper understanding of content (Bryce et al., 2000). Hence, SRL processes develop adaptive cognitive skills across educational curriculum topics and subject areas (Peel, 2020; Rajabi, 2012). Acquiring SRL skills can improve cognitive abilities such as flexible thinking and efficient problem-solving, which are increasingly vital for thriving in the global job market and for future career prospects that may not exist yet (Darling-Hammond, 2010; Kistner et al., 2010). Furthermore, students with strong SRL skills tend to enrol in higher-level courses and encounter more demanding academic tasks (De Corte et al., 2011). Thus, while the learning autonomy that self-regulated learners possess is considered one of the most critical factors contributing to student success, it also provides individuals with the cognitive resources to learn beyond the boundaries of traditional classrooms (Baby & Saeed, 2020; Benson, 2017).

Student SRL has been examined at various levels of educational careers, including primary school, secondary school, and higher education (Alvi et al., 2016; Alvie & Gillies, 2020; Neitzel & Connor, 2017; Peeters et al., 2016). Many insights on SRL have evolved since its conception in the 1990s. Initially, SRL was perceived by scholars and educators as a process only relevant to students at higher levels of education (Panadero, 2017). Likewise, some teachers perceived SRL as relevant only for students with high academic achievement (Peeters et al., 2016) or, on the contrary, only necessary for students with lower academic abilities (Waeytens et al., 2002). More recently, it has been recognised that all students can benefit equally from developing SRL skills regardless of age or ability level (Karlen et al., 2020; Vosniadou et al., 2020). SRL skills have been identified in preschool

students, and their manifestation continues to grow throughout the primary school years (Perry et al., 2018). There has been an increasing interest in engaging students in SRL processes during their primary school years, as even the youngest children benefit from its practices (Dignath, 2016; Nunez et al., 2022). Hence, the progression in SRL research has recognised SRL processes as developmental and not age-related (Oates, 2019) and should be an essential educational objective for every student (Perry, 2013; Perry et al., 2018).

Implementing SRL practices from the earliest years of primary school helps set up the necessary skills and attitudes during students' crucial years of development, as opposed to attempting SRL implementation when students have already developed troublesome learning styles and behaviours (Dignath, 2016). Although there are several different SRL models, there is consensus among each model that students can be more successful using relevant strategies to monitor and control learning processes and outcomes (Panadero, 2017; Vosniadou et al., 2020). Due to the evident influence of SRL on learner outcomes, the literature shifted focus toward the educational implementation of SRL in the classroom (De Smul et al., 2018a; Cleary et al., 2022). The implementation of SRL refers to the intentional and strategic actions teachers take to incorporate SRL into classroom practices, intending to improve students' ability to regulate their learning (Geduld, 2017).

The challenge of SRL implementation is bridging the gap between SRL as a concept and the promotion and application of SRL through instructional guidance at school (De Smul et al., 2020; Harding et al., 2019; Peel, 2020; Steinbach & Stoeger, 2016). Teachers encounter a significant obstacle as curriculum and policy documents, such as the Australian curriculum (ACARA, 2022), endorse the concept of SRL capabilities but do not provide practical guidance on incorporating them into everyday classroom teaching and content (Peel, 2020). Scholars have urged further inquiry, emphasising the need to solicit

teachers' perspectives and experiences to understand better how SRL can be effectively implemented in the classroom (De Smul et al., 2020; Dignath, 2021; Karlen et al., 2020). It is important to understand the differences in teachers' promotion and teaching of SRL by identifying their understanding and instructional decisions regarding SRL (Peeters et al., 2016). Exploring teachers' considerations concerning SRL implementation will contribute to advancing knowledge in this area and its practical implementation in the classroom (Peeters et al., 2016).

History and Background of Reading Comprehension

Reading comprehension is the process of extracting text to construct meaning (Snow, 2002). It is a multifaceted and dynamic cognitive process characterised by intricate components that interact synergistically. Proficiency in reading comprehension relies on foundational elements such as decoding individual words, fluency, and vocabulary knowledge (Cutting et al., 2009). Moreover, higher-order cognitive processes, including but not limited to inference-making, working memory, critical analysis, and the integration of prior knowledge, play a pivotal role in constructing meaning from textual information (Arrington et al., 2014). The complex interplay of these elements underscores the complexity and depth of reading comprehension, highlighting its significance as a cognitive endeavour that extends beyond basic word recognition (Cirino et al., 2017). Given the pivotal role of reading in an individual's personal and educational growth, substantial research has been dedicated to examining how educators can effectively support the development of students' reading comprehension (Buchori & Hadiyanto, 2020).

Earlier research shows that the causes of student difficulties in reading comprehension among primary students were most commonly linked to word reading accuracy, reading fluency and oral language skills (Sesma et al., 2009). However, there is a

more recent recognition of the contributions to reading comprehension beyond the skills of decoding. The comprehension process is now more predominantly linked to student aptitudes in planning, organising and self-regulation (Meltzer, 2018). It has been well documented throughout the literature that strategies are crucial to achieving reading comprehension (Paris et al., 1983). However, with a vast amount of available comprehension strategies for students, recent research argues that strategy knowledge is not enough to achieve high levels of comprehension (Ng & Graham, 2017). Instead, teacher emphasis needs to be on how to use strategies effectively. For example, strategies must be purposeful, effortful and require a motivational drive. This has directed research on reading comprehension toward teaching metacognition and SRL (Erdogan & Akkaya, 2020; Lee & Schallert, 2021).

Exploring reading comprehension in today's primary school students requires considering the challenges related to literacy within the context of the 21st century (Jansen et al., 2020). Contemporary classrooms present settings that encompass innovative and alternative methods of reading that arise due to technological advancements (Lee, 2001; Ng & Graham, 2017). Traditional print-based reading materials are no longer the only options, and young learners today are acquiring new methods of engaging with reading that vary from those of earlier generations. Reading on the internet requires comprehension skills similar to and beyond those required in conventional printed text (Chan & Unsworth, 2011; Jansen et al., 2020). In traditional print-based material, students must evaluate main ideas and make inferences from a fixed two-dimensional written text displayed in a linear sequence. However, the open and interactive navigation design within online reading environments risks further obscuring the information structure and can disorientate the reader's attempts to construct meaning. Navigating the internet is a cognitively demanding

task involving numerous texts and information from various sources that can present many challenges for young learners (Ng & Graham, 2017; Patra et al., 2023). As a textual environment, the internet is unstructured, ambiguous, and filled with visual representations intentionally designed to deceive and can quickly disorient readers (Araka et al., 2020). The characteristics of online text formats require different and new ways of interacting with information, including high-level metacognitive skills (Keslo et al., 2020).

Grounded in the theoretical and empirical understanding of reading comprehension are the principles of forming goals regarding the text, selecting and planning strategies, determining whether those strategies are successful, and finally, self-assessing individual achievement of comprehension goals (Cirino et al., 2017; Meltzer, 2018). Such processes overlap with the phases and models of SRL, particularly Zimmerman's (2000). SRL manages and directs these processes, allowing students to exhibit competent comprehension (Dignath-van Ewijk et al., 2019). Phonics-related instruction is effective for children whose difficulty in reading comprehension stems from single-word reading (Fuchs et al., 2021). However, primary students who struggle with reading comprehension but have basic reading skills, such as single word reading, may require interventions to develop self-regulatory reading skills (Sporer et al., 2017). SRL skills can be particularly effective in helping students since "teaching students how to think is just as important as teaching students what to think" (Mason, 2013, p. 126). Students must be strategic and critical in their reading to be successful readers in the 21st century.

In the field of SRL, studies have examined the role of individual subprocesses of SRL on reading comprehension, such as self-questioning strategies (Kim & Lee, 2021) or metacognitive tasks, including summarising (Ishaq & Ali, 2018). This is a problematic foundation for research in this field because, while such components are essential features

of SRL, there is a lack of research that examines the whole process of SRL instead of individual components (Sporer et al., 2017). For example, just because students use a reading strategy does not simply indicate that they can self-regulate their learning. Instead, the collective use of regular goal setting, strategy selection and self-reflection make up the whole process of SRL (Panadero, 2017; Zimmerman, 2000). Research on reading comprehension and the complete process of SRL has only emerged in recent years and has demonstrated a strong and positive effect of SRL programs on reading comprehension (Sporer & Schunemann, 2014; Sporer et al., 2017). However, these studies delivered SRL instruction by trained research tutors instead of teachers. While these studies highlight SRL's potential for improving student reading comprehension, they do not provide insights into how teachers implement SRL methods. Understanding the complexities of the classroom environment, particularly the practical application of SRL by authentic teachers, is essential for providing exemplary SRL implementation guidelines (Dignath & Sprenger, 2020; De Smul et al., 2019). An essential element in understanding how teachers can effectively implement SRL is understanding teachers' perspectives that guide their practice as educators.

The Research Problem and Justification of the Research

The implementation of SRL in educational settings from teachers' perspectives requires further investigation in line with the expanding body of literature emerging in this field (Harding et al., 2019). Teachers require specialised knowledge and expertise to apply SRL effectively, and gaining insights into their understanding of how they can be effectively supported in developing these skills is an essential research focus (Dignath, 2021; Greene, 2021; Karlen et al., 2020). Additionally, the application of SRL to enhance reading comprehension in the Australian educational context is a significant issue that

requires more in-depth investigation (Ainley et al., 2022; Hillman et al., 2023; Thomas et al., 2022). This section will address the specific research problems associated with these topics.

SRL Implementation

Students differ in their self-regulating ability, and SRL is not an automatic process for all students (Boekaerts, 1997; Duckworth & Yeager, 2015). However, an individual's self-regulatory abilities are teachable (Geduld, 2017). SRL skills can effectively enhance academic success, particularly among primary school students (Dignath et al., 2008; Harding et al., 2018). Research shows a decrease in engagement and motivation in learning as students move into secondary school, with primary school students displaying a greater use and benefit of SRL than secondary students (Wigfield et al., 2007). Therefore, it is recommended that students are taught SRL as early as possible before this decline occurs (De Smul et al., 2018a). Due to a lack of support and exposure, many students never acquire SRL skills and may experience problems with academic learning over time (Geduld, 2017). Hence, developing students into self-regulated learners is an important educational goal that should play a fundamental role in classroom practice (De Smul et al., 2018a; Panadero, 2017). While there is a growing body of literature related to the impact of SRL on academic success (Panadero, 2017), there is a lack of understanding of the components related to successful SRL implementation in educational settings.

The implementation of SRL poses a challenge in effectively bridging the gap between the conceptual understanding of SRL and its practical application within school settings (De Smul et al., 2020; Harding et al., 2019; Peel, 2020; Steinbach & Stoeger, 2016). Teachers face a significant hurdle as SRL is a relatively new educational initiative that requires comprehensive understanding and practical guidance to integrate it

successfully into their teaching practices and curriculum (Michalsky, 2021; Porter & Peters-Burton, 2021). Scholars have underscored the necessity for further exploration, emphasising the need to seek insights and experiences from teachers themselves to gain a better understanding of how SRL can be effectively implemented in the classroom (De Smul et al., 2020; Dignath, 2021; Karlen et al., 2020). It is essential to understand the differences in teachers' promotion and teaching of SRL by identifying their perspectives and instructional decisions regarding SRL (Peeters et al., 2016). Exploring teachers' considerations concerning SRL implementation will contribute to advancing knowledge in this area and its practical implementation in the classroom (Peeters et al., 2016).

Professional Expertise in SRL Implementation

SRL is a distinct domain in which teachers can have different attitudes and expertise (De Smul et al., 2018b; Karlen et al., 2020). Professional expertise refers to the specialised knowledge, skills, and abilities acquired through education, training, and experience within a particular field (Billett et al., 2018). Furthermore, teachers' professional expertise is a complex and multifaceted combination of professional knowledge (Ellis & Smith, 2017). While research highlights particular ways teachers can promote SRL, defining the professional expertise necessary for teachers to implement SRL remains unclear (Karlen et al., 2020). In SRL implementation, teachers are faced with the challenge of not only teaching subject matter but also the strategic learning process. The latter requires teachers to acquire new knowledge and skills to teach learning strategies, representing a distinct approach and teaching methodology (De Smul et al., 2018b; Karlen et al., 2020).

Although teachers commonly hold positive attitudes towards SRL principles in teaching and learning, they often withdraw from its implementation for several reasons, including limited knowledge and insufficient school-based support (Steinbach & Stoeger,

2016). This finding is particularly concerning within the field, as teachers play a vital role in developing and promoting student SRL (Perels et al., 2007; Perels et al., 2009). Studies have accentuated that teachers require substantial support and training in implementing new theories such as SRL into practice (De Smul et al., 2020; Spruce & Bol, 2015). Further exploration is needed to investigate how teachers can effectively attain expertise in SRL implementation (Cleary et al., 2022; Dignath, 2021). Gaining insights into teachers' perspectives regarding the development of expertise in SRL implementation can offer schools and researchers globally with valuable information for enhancing teacher support systems, evidence-based policymaking, and student outcomes, ultimately benefiting educators and students alike (De Smul et al., 2020; Greene, 2021).

SRL Implementation and Reading Comprehension

In classrooms across Australia, schools are tackling challenges with student reading comprehension abilities. These challenges have been identified through recent international and national assessments, including the Progress in International Reading Literacy Study (PIRLS), the Program for International Student Assessment (PISA) and Australia's National Assessment Program - Literacy and Numeracy (NAPLAN). Consistent findings from the most recent assessments, including PIRLS (2021), PISA (2018), and NAPLAN (2022), underscore the persistent challenge of subpar reading comprehension abilities among students in Australia (Ainley et al., 2022; Hillman et al., 2023; Thomas et al., 2022). The annual NAPLAN evaluation in Australia measures students' literacy and numeracy skills in Years 3, 5, 7, and 9 (Australian Curriculum Assessment and Reporting Authority [ACARA], 2015). Longitudinal studies of reading development using NAPLAN test scores indicated decreasing growth trajectories from grade 3 to 7 in reading development (McDonald & Carmichael, 2018; McLeod et al., 2019). This increasing decline in

NAPLAN mean scores have been detected in national data since the conception of NAPLAN testing in 2008 and indicates reading underachievement in Australia's students as they progress from primary to secondary school (Christensen et al., 2022; Hillman et al., 2023; Larsen et al., 2022). These trends have also been interpreted as indications of poor reading abilities in secondary school (Christensen et al., 2022). These concerning findings are widespread in Australia across all socio-economic quartiles and schooling sectors, including government, catholic and independent schools (Gonski et al., 2018).

These educational challenges are not confined to the Australian context. Similar declining trends in reading test scores are also visible in nationally standardised tests in the United States (Goss & Sonnemann, 2016; Hopwood et al., 2017; Kieffer & Lesaux, 2020). PISA (2018) reading results demonstrate a worldwide educational concern as “over ten million students represented by PISA in 2018 were not able to complete even the most basic reading tasks - and these were 15-year-olds living in the 79 high and middle-income countries that participated in the test” (Schleicher, 2019, p. 5). Global concerns on this matter remain (Brenner, 2023; D'Angelo & Goldman, 2021; Kendeou et al., 2020). Reading comprehension is a complex and cognitively demanding task requiring students to coordinate the thinking processes to guide, monitor, and direct strategies, thoughts and actions toward learning (Perfetti & Stafura, 2014). Enhancing SRL skills in students enables the development of higher-order thinking required for reading tasks (Nunez et al., 2022; Peel, 2020). Therefore, classroom practices must support the development and awareness of SRL in students, particularly its function in the reading process (Follmer, 2018). However, there is limited understanding regarding current practices employed by teachers to effectively cultivate the development of student SRL during reading comprehension (Harding et al., 2018; Peel, 2020).

The prospects of SRL skills in enhancing student achievement provide a potential solution for the existing educational challenges (Efklides, 2020). Investigating SRL implementation and reading comprehension instruction is of national importance, and understanding effective approaches have theoretical and practical value globally. Reading is an essential life skill that, if not adequately developed during primary school years, may compound learning and reading problems over time (Cirino et al., 2017). While there is a growing body of literature related to the impact of SRL on academic success (Panadero, 2017), what constitutes successful SRL implementation in educational settings requires further investigation. This study aims to bridge that gap by gaining insights into how effective SRL implementation and reading comprehension is understood by practising classroom teachers from a school with an SRL teaching emphasis. The research aims, and overarching questions are further specified below.

The Research Purpose

The research aims to contribute to the growing body of literature on effective SRL implementation in educational contexts. The study addresses teachers' understanding of successfully integrating SRL into teaching practices and improving student outcomes. Additionally, the research aims to explore the implementation of SRL in the context of reading comprehension. To achieve these objectives, the study will focus on Grades 5 and 6 teachers from a school that has adopted an SRL approach to teaching and learning in Victoria, Australia. The specific aims and questions that guide this research are outlined below.

The Research Aims

There are three broad aims of the research. They are:

1. To explore teachers' understanding of how they can acquire professional expertise for successfully implementing SRL in Grades 5 and 6 classrooms.
2. To explore teachers' understanding of effective SRL implementation in Grades 5 and 6.
3. To explore teachers' understanding of effective SRL implementation in the context of reading comprehension among Grades 5 and 6 students.

The guiding research questions that steered this study are presented below.

The Research question(s)

The research questions that guided this study seek to gain insights into teachers' perspectives on effective SRL implementation and reading comprehension, focusing on Grade 5 and 6 students in one context. The research project explored the following overarching question: What are teachers' perspectives on effective SRL implementation and reading comprehension in Grades 5 and 6? Three guiding questions follow this, including:

1. What are teachers' understandings of how they can acquire professional expertise for successfully implementing SRL in Grades 5 and 6 classrooms?
2. How do teachers understand effective SRL implementation in Grades 5 and 6?
3. What are teachers' understandings of effective SRL implementation in the context of reading comprehension among Grades 5 and 6 students?

The Researcher's Background

The researcher's academic background includes a Bachelor's degree in Psychology and a Master of Teaching (Primary). Accumulating five years of experience in the field of education, the researcher has undertaken diverse roles. These roles encompass Grade 6 classroom teaching and specialised education for children with disabilities across primary

levels. Throughout this professional journey, the researcher has cultivated a deep commitment to nurturing self-regulated learning among primary school students. This commitment has inspired the researcher's ongoing dedication to developing and implementing innovative and effective teaching strategies. The researcher aspires to explore the intricacies of SRL in greater depth and uncover valuable insights that can shed light on its practical applications within primary education.

The Research Design

This study explores teachers' constructed knowledge of effective SRL implementation and reading comprehension, investigating their interpretations and understandings. The study's research design has been devised based on the philosophical underpinning of the study, a theoretical framework and methodology. The upcoming sections will provide a concise overview of these topics, while the research design chapter will offer a more comprehensive and detailed description.

Philosophical Underpinning and Theoretical Perspective of the Research

This study presents the methodological approach to researching within a relativist ontological perspective, regarding reality as subjective and differing between persons (Scotland, 2012). This study is interested in how individuals construct meaning and knowledge through a constructivist approach (Ultanir, 2012). Constructivism guided the understanding of the participants' generation of meaning concerning their involvement in SRL implementation and reading comprehension. Aligned with this philosophical position, interpretivism, offers a perspective for understanding phenomena as viewed through the participants' interpretation of their experiences (Oliver, 2011). How these understandings can then be applied in a broader context is explored through Symbolic Interactionism (Bowers, 1989; Crotty, 2003). Symbolic interactionism is an approach to interpretivism that

was founded by Mead (1934) and is rooted in Social Psychology as a social and interpretive process of the relationship between human behaviour and external stimuli (the world). How human beings interpret and respond to situations is based on individual interpretation of the world rather than the world itself (Oliver, 2011). With this approach, the participants' perspectives become the starting point for analysis, and the researcher must note the role of himself/herself and identify the role from which the participant is speaking (Bowers, 1989). The researcher explores participants' perspectives, which later expand to the larger social context. The assumptions of symbolic interactionism establish a foundation on which the methodological approaches of grounded theory can be built and applied in this study.

Methodology

Among the plethora of research methods that exist for researchers to apply, research methodology should align with the philosophical underpinnings of the study to produce credible findings (Rieger, 2019). The selection of a qualitative methodology enabled the study to delve into the intricate nuances of participants' experiences and perspectives, facilitating a comprehensive exploration of the research topic (Cope, 2014). The original principles of grounded theory established by Glaser & Strauss (1967), commonly referred to as Classic Grounded Theory (CGT), has constructivist and symbolic interactionist foundations, assuming that people construct meaning, society and reality through interactions. This epistemological assumption and theoretical perspective correspond with the philosophical stance and focus of this study's investigation and provide the most effective methodology to guide the gathering and processing of data in this research project. CGT is a methodology that conceptualises what is going on for the participants using empirical data, identifying primary interests and core categories. *Constant comparison*, a fundamental principle of CGT, generates new insights and knowledge closely integrated

with the data, contributing to understanding the participants' perspectives. The final formation of core categories involves further analysis, considering the existing body of literature to situate, compare, and contrast the data with the related research areas. This research seeks to identify and explain teachers' understandings, practices and beliefs about SRL implementation and reading comprehension. While most qualitative methodologies are focused on sharing participant experiences and stories, CGT is geared toward developing a conceptual model that theorises participant behaviour and perspectives (Breckenridge, 2014).

Participants

This research project focuses on a Catholic primary school in Victoria, Australia, using an integrated SRL approach to teaching and learning. Before the current study was conducted, the school administration had organised Professional Development (PD) opportunities focused on SRL for its teachers over the course of one year. These opportunities were aimed at improving the teachers' ability to support their students' SRL. While the present study does not examine the specific type of PD or school programs offered, it aims to explore teachers' perspectives on how they can acquire the professional expertise necessary for implementing SRL successfully, their understanding of what constitutes effective SRL implementation, and how this implementation can support students' reading comprehension. The investigation focused on Grades 5 and 6, and all classroom teachers in these year levels were invited to participate in the study. All teachers in Grades 5 and 6 responded positively to the invitation, resulting in six participants being interviewed. The procedures for approaching the participants are outlined in the chapter dedicated to the research design (Chapter Three).

Data Collection

Unstructured interviews provided a suitable means of fulfilling the present study's aim to obtain rich data using a CGT approach (Minichello et al., 2008). Although complete elimination of researcher bias is never achievable, specific measures were implemented to mitigate its impact. The use of unstructured interviews minimised the researcher's influence on the data (Glaser, 2012), allowing participants to freely express their perspectives on SRL implementation and reading comprehension. The researcher intended to investigate the data without preconceived hypotheses or assumptions that could direct the data. This method is consistent with CGT principles (Glaser & Strauss, 1967) and aimed at enabling participants to identify aspects that they deemed most significant concerning the research topic. The interviews were audio-recorded and transcribed to enable the researcher to verify the accuracy of the data. In this way, audio-recording and transcribing interviews assisted in minimising researcher bias during data analysis.

Data Analysis

The key principle of CGT employed for this study's focus was its distinguishable characteristic of constant comparison. Constant comparison involves systematically comparing data, concepts, and categories throughout the research process (Glaser & Strauss, 1967). It allows the researcher to develop new insights and knowledge that is "credible, consistent and closely integrated with the data" (Kenny & Fourie, 2013, p. 1271). Hence, CGT allowed the researcher to discover categories that emerged from the data rather than being predetermined (Engward, 2013). This contrasts with deductive approaches that begin with previous ideas and seeks to examine their viability by examining data (Minichiello et al., 2004). The CGT approach provided an unbiased and open approach to guide the identification of categories related to the participants' perspectives on the

research topic. This data was then scrutinised to identify subcategories that formed the basis for further analysis. A further analysis explored the categories and subcategories of findings in greater depth and detail by drawing on the existing body of literature (Chametzky, 2016; Glaser & Strauss, 1967). As a result, this study offered theoretical propositions and a substantive conceptual model representing the participants' understanding of effective SRL implementation and reading comprehension.

Research Limitations

The scope of this study is based on a single Catholic primary school in Victoria, Australia. Therefore, the generalisability of the study's findings is limited, nor was it the purpose of this research. The study was limited to teacher perspectives, as they are the primary agents responsible for implementing SRL practices and facilitating reading comprehension in the classroom (Peel, 2020; Spruce & Bol, 2014). No surveys or quantitative methods were used to gather data based on teacher SRL training programs or students' academic abilities, as these methods may be inconsistent with CGT and may potentially force the data (Glaser & Strauss, 1967). This outcome arose from the conclusion that the research prioritised the participants' understanding of SRL implementation and reading comprehension as opposed to concentrating on specific outcomes.

By eliciting the teachers' insights and experiences, the study aimed to understand the challenges, opportunities, and successful strategies associated with classroom teaching. Furthermore, the research deliberately avoided examining additional data sources to prevent undue influence on the findings and ensure a genuine understanding of SRL implementation solely from the teachers' perspectives. By focusing exclusively on teacher perspectives, the study aimed to gain more nuanced and authentic insights into teachers' understanding that could provide a basis for future research.

The study was also confined to Grades 5 and 6 teachers to narrow its focus to a particular year level and account for the differences in students' cognitive and developmental abilities across age groups in primary school. This enabled the study to gather more specific and targeted insights into the implementation of SRL and reading comprehension instruction in these year levels, which can inform more effective teaching practices for these students. However, it is important to acknowledge that the findings of this study may not be generalisable to other year levels or educational settings and warrant further investigation.

The Significance of the Research

This study builds on the existing research in SRL implementation and reading comprehension in the primary school sector. The significance of this research lies in its potential to inform educational practices and enhance student learning outcomes in this area. The study aims to identify the elements of effective SRL implementation experienced by teachers with an SRL focus. The study offers insights into teachers' understandings of how they can acquire the professional expertise relevant to SRL implementation, what constitutes effective SRL implementation, and the use of SRL implementation to improve student learning in the specific area of reading comprehension.

At a local level, this study can contribute to developing more effective and evidence-based teaching practices that promote student competencies in SRL and reading comprehension. Nationally, there is a limited body of research on SRL implementation and reading comprehension from the teachers' perspective (Harding et al., 2018; Peel, 2020), and these insights may be of interest to a country seeking to improve its reading comprehension results and inform school-wide approaches to SRL. Additionally, the

findings of this research may have broader international relevance for schools seeking to develop students as self-regulated learners.

The value of supporting the development of SRL during formal education continues to unfold worldwide (Atmojo et al., 2020; Carter et al., 2020; Hudaifah, 2020; Hong et al., 2021; Wijaya et al., 2020). More recently, SRL skills have become vitally necessary, especially concerning unprecedented circumstances such as the Covid-19 pandemic (Ariebowo, 2021; Hidayati & Husna, 2020). To succeed in an absolute online and remote environment, individuals must find ways to regulate their learning (Haysa & Handler, 2020). Therefore, there has been a strong emphasis on transforming traditional pedagogies to facilitate the development of SRL aptitudes worldwide (Li & Wang, 2021; Margolin et al., 2021; Rizun & Grygoruk, 2020).

The study's insights and approaches may offer a valuable lens for other contexts considering approaches to SRL implementation. Overall, this research has the potential to generate valuable insights that can inform educational policies and practices, which, in turn, can benefit students, teachers, and the wider educational community. By better understanding teacher perspectives, this research has the potential to contribute to developing initiatives that promote student competencies in SRL and reading comprehension, which is vital for student success and academic achievement.

Structure of Thesis

The thesis comprises seven chapters. *Chapter One* provides an overview of SRL , which has gained increasing interest over the past three decades due to its potential to develop independent learning skills crucial for academic success. This chapter also discusses the current state of the literature on implementing SRL in educational settings to support student learning. Additionally, it addresses the issue of student reading

comprehension competencies, particularly in the Australian context. It proposes how the implementation of SRL can be a solution to improve student reading comprehension. Furthermore, this chapter develops a rationale for the study by identifying gaps in research related to SRL implementation and reading comprehension. It introduces the research problem, the study's aims and questions that guided the research, and provides an overview of the research design, limitations, and the significance of the study.

Chapter Two presents a review of relevant literature. The review covers three critical areas related to the study: SRL theory, SRL implementation and SRL implementation in the specific area of reading comprehension. The literature review provided a context in which the research aims, questions, and research design developed. Additionally, the existing body of knowledge offers a framework for contextualising and analysing the findings generated by the study.

Chapter Three describes the research design for this study in detail. The chapter outlines the epistemology, theoretical perspective, and methodology that underpin the research, which is situated within a qualitative approach. The study is based on a constructivist paradigm and an interpretivist approach underpinned by symbolic interactionism. The chapter discusses the methodology of Classic Ground Theory and the data collection and analysis approach. The chapter discusses strategies that were employed to ensure the trustworthiness of the research findings and outlines the limitations of the study.

Chapters Four to Six provide a detailed account of the research findings from the data collected during the study. Three distinct categories were identified, each with associated subcategories. *Chapter Four* presents the findings from the first category, providing valuable insight into SRL-focused professional development. *Chapter Five*

presents the findings from category two, highlighting the participants' understanding of student readiness for SRL in Grades 5 and 6. *Chapter Six* explores the third and final category, which pertains to applying SRL phases in reading comprehension-based teaching. To support the discussion of each category, specific references to the interview transcripts are provided. Each chapter offers a comprehensive analysis of the categories, drawing on the broader context of related research to provide a final conceptualisation of the category findings.

Chapter Seven offers an overview of the research project and presents theoretical propositions generated from the research findings. The chapter explores the implications of these findings for effective SRL implementation and reading comprehension in Grades 5 and 6. A substantive conceptual model is presented, reflecting classroom teachers' authentic experiences and perspectives. The model provides a valuable framework for future research in this area. The study's identified themes are also presented as potential avenues for future research exploration. By doing so, the study contributes to the ongoing development in the field of SRL implementation and reading comprehension.

Conclusion

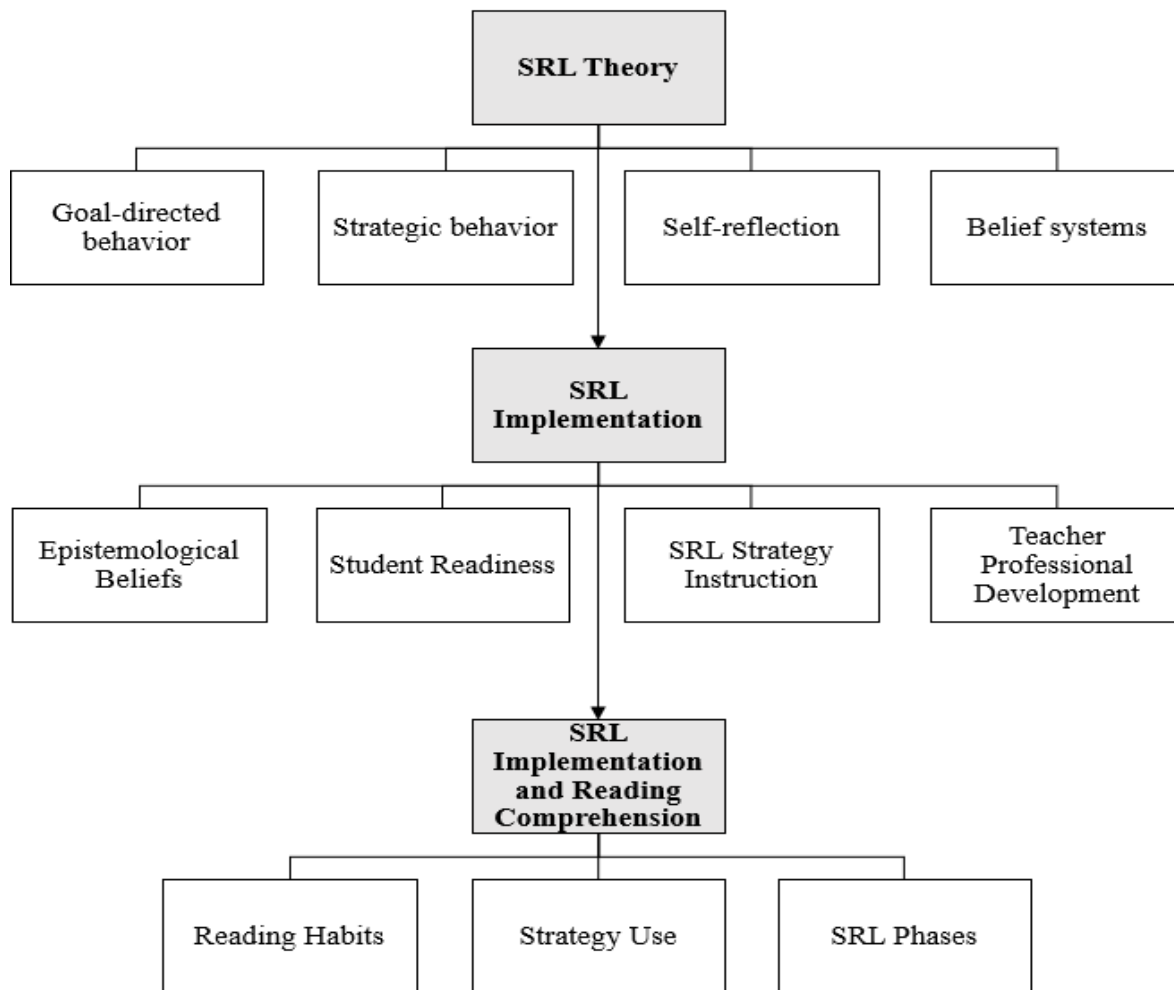
This chapter has laid the groundwork for the research project by providing a comprehensive overview of the previous research, an explanation of the research problem and justification for the study, and the research aims and questions. The research design was summarised and briefly explained, emphasising its suitability and relevance to the current study. The limitations of the research were also discussed, along with the significance of the research. An overview of the overall structure of the thesis was provided. Drawing upon the groundwork presented in this chapter, further elaboration on these research components will be provided in subsequent chapters. Specifically, the next

chapter will review the literature relevant to SRL implementation and reading comprehension.

Chapter 2.

Literature Review

Chapter Two provides a comprehensive overview of the literature reviewed for this investigation and concentrates on three main areas: SRL Theory, SRL implementation, and SRL implementation and Reading Comprehension. The chapter begins by defining SRL and exploring common themes between current SRL models. The chapter then shifts its focus to the effective implementation of SRL in classroom settings, identifying critical areas of emphasis in the existing literature. A review of SRL implementation in the context of reading comprehension follows. Through this review, the study's rationale is systematically developed, highlighting gaps in research concerning SRL implementation and reading comprehension. Figure 1 provides a visual summary of the literature review.

Figure 1*Literature Review - A Conceptual Diagram*

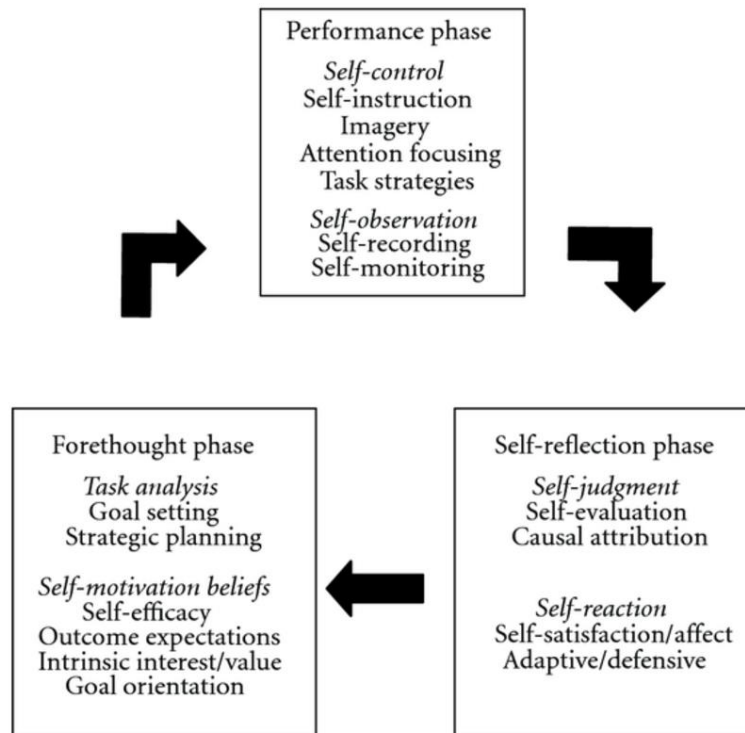
Self-Regulated Learning (SRL) Theory

Self-Regulated Learning (SRL) is the process of developing control and autonomy over one's learning by monitoring, directing, and regulating actions towards a learning goal (Zimmerman, 2000). The ability to self-regulate learning has become of increasing interest and importance over the past two decades, owing to the continuous evolution of our world and the demand for lifelong learning (Kistner et al., 2010; Panadero, 2017; Zimmerman, 2001). Research on SRL originated with Zimmerman (1986), who remains the most prominent SRL writer (Panadero, 2017). He was the first to introduce a model of SRL (Zimmerman, 1986), which was later followed by subsequent models involving a similar

division of SRL into specific phases. Zimmerman (2000) proposed three phases of SRL: forethought, performance, and self-reflection. These phases assist with understanding SRL and are illustrated in Figure 2.

Figure 2

Cyclical Phases and Sub-Processes of SRL (Zimmerman, 2000)



Various models of SRL have been developed over time, including Boekaerts (1991), Efklides (2011), Pintrich (1990, 2000), Winne and Hadwin (2008), and Zimmerman (1986, 1989, 2000). Each SRL model presents a cyclical process that is made up of phases and sub-processes. While some models distinguish between these phases and sub-processes (Zimmerman, 2000; Pintrich, 2000), others are recursive and open (Boekaerts, 2000; Efklides, 2011; Winne & Hadwin, 2008). All SRL models emphasise common features, including goal-directed behaviour, strategic behaviour, self-reflection, and belief systems. The following section examines these essential features to determine their significance in SRL.

Goal-Directed Behaviour

SRL is heavily driven by goal-directed behaviour and requires students to regularly develop, monitor and appraise learning goals (Alotaibi et al., 2017; Pandero, 2017; Zimmerman, 2002). Goal setting is a critical aspect of the forethought phase of Zimmerman's model of SRL (Zimmerman, 2000) and plays a crucial role in all SRL models (see Boekaerts et al., 2000; Paris & Paris, 2001; Zimmerman & Schunk, 2001). Goal setting ensures that learning is directed and more meaningful for students (Alvi & Gillies, 2020; Bloom, 2013; Sebesta & Bray Speth, 2017). Additionally, Zimmerman (1990) highlights the reciprocal relationship between goal setting and motivation. When a learning task can contribute to the student's life by assisting them in accomplishing their future short-term and long-term goals, the learning becomes more relevant and meaningful (Alexander, 2018; Clegg & Kolodner, 2014). Relevance helps students determine whether learning content is worth knowing based on its role in their current and future life. This connects with theories of relevance in education and highlights the importance of learning material that makes targeted connections to individual student goals and interests (Alexander, 2018; Schmidt et al., 2019; Wilson & Sperber, 2002). Although the significance of goal setting in SRL is incontrovertible, there is a dearth of information on how teachers enable primary school students to create meaningful goals during the early stages of SRL (Kim & Lee, 2021; Rinaudo & Simonsen, 2022; Schunemann et al., 2017).

Strategic Behaviour

Strategic behaviour is the cornerstone of SRL and plays a crucial role in all SRL models (Panadero, 2017). Strategic behaviour refers to the planning, monitoring, modifying and evaluation of individual progress (Butler & Winne, 1995). Zimmerman (2001) emphasises strategic behaviour in the second and performance phase of SRL. The

performance phase aims for learners to develop a repertoire of strategies for approaching learning goals and the ability to select the appropriate strategy to complete the task (Maag Merki et al., 2013). To achieve their intended goal, it is crucial for learners to be consciously aware of their strategic approach and take intentional steps towards it. By monitoring their progress, students can identify effective and ineffective strategies. Strategic behaviour must be accompanied by self-monitoring (Zimmerman, 2000). Thus, it is essential for strategic behaviour to also focus on enhancing self-awareness and developing control over the cognitive strategies employed, as this exercise of control over one's cognitive abilities is related to metacognitive processes and acts as a foundation for cultivating effective strategic behaviour (Karlen et al., 2020; Ramachandran et al., 2016). Consequently, metacognition plays a pivotal role in SRL and is a fundamental component of all SRL models (Kistner et al., 2015; Karlen et al., 2020; McCombs & Marzano, 1990; Panadero, 2017; Winne & Hadwin, 1998).

Self-Reflection

Self-reflection is an important SRL process that is applied and included in SRL models (Ramachandran et al., 2016). Self-reflection in SRL involves students appraising their task performance and making attributions to their success or failure (Panadero, 2017). This is emphasised in Zimmerman's (2001) third and final phase, the self-reflection phase, and occurs after completing a task. During this phase, students are expected to assess their performance against the goals they established earlier. Students unable to self-assess and evaluate their work are more likely to experience failure (Cassidy, 2007; Yan & Brown, 2017). Self-reflection phases in SRL aim to inform future performance and learning goals (Hacker & Bol, 2019). Hence, this final phase of SRL is intended to inform the next goal-setting attempt. This demonstrates the cyclical and ongoing process of SRL, where self-

reflection, goal setting and strategic behaviour are interrelated and continually direct one another, resulting in lifelong learning (Herring, 2020; Panadero, 2017). For this reason, self-reflection can allow students to achieve knowledge consolidation (Stokes & Craig, 2022) and individual agency (Winne et al., 2010).

Belief Systems

SRL phases are commonly associated with belief systems, specifically self-efficacy (Zimmerman, 2008; Muis et al., 2017). Self-efficacy pertains to an individual's belief in their ability to accomplish a task or perceived learning capabilities within a specific domain (Bandura, 1997). For example, studies have explored the influence of students' reading ability self-perceptions on their academic performance (Aukerman & Schuldt, 2015). Self-efficacy has garnered significant attention in educational psychology, with researchers investigating its role in shaping learners' motivation, self-regulation, and achievement across various domains and age groups (Lent et al., 2019; Pekrun et al., 2019; Rosario et al., 2021). Studies have consistently shown that learners with higher levels of self-efficacy tend to demonstrate higher levels of motivation, persist longer in their learning efforts, and ultimately achieve higher levels of academic success (Bandura, 1997; Schunk & Usher, 2011; Zimmerman & Martinez-Pons, 1988). For instance, learners with higher levels of self-efficacy are more likely to engage in challenging activities that promote their learning and development (Zimmerman, 2000). Therefore, an individual's beliefs regarding the learning process and their learning ability have the potential to influence whether and how they engage in SRL (Efklides, 2011; Wolters & Pintrich, 1998).

Summary of SRL Theory

The field of SRL research has primarily focused on developing and validating models that explain SRL processes (Panadero, 2017). Scholars have tested many different

aspects of these models, such as the role of goal setting or the role of metacognition, to gain empirical evidence and test their validity (Dignath & Buttner, 2018). This section discussed critical and shared processes of SRL emphasised in the existing models, including goal-directed behaviour, strategic behaviour, self-reflection, and belief systems. The various processes of SRL demonstrate the multidimensional lens through which it can be considered and its key benefits to learners (Sungur & Topcu, 2020). It is imperative to acknowledge that the significance of each constituent process of SRL lies in its intersection with a cyclical learning process that culminates in self-regulation (Panadero, 2017). Therefore, it is the interplay of these processes rather than any individual component that constitutes SRL. Given the significant empirical evidence linking SRL skills to academic learning, current research has shifted its focus to the educational implementation of SRL in the classroom. In the following section, the literature on SRL implementation is explored.

SRL Implementation

In recent years, there has been a growing interest in the concept of SRL within the field of education (Panadero, 2017). However, SRL is not an automatic process for all students or a skill that students can acquire spontaneously (Boekaerts, 1997; Vandeveldel et al., 2012; Zimmerman & Schunk, 2001). Instead, it can be promoted and cultivated in students, beginning at the primary school level and continuing beyond secondary school (Dignath & Buttner, 2008; Perry et al., 2018; Vandeveldel et al., 2012). Therefore, studies have shifted towards promoting and implementing SRL through school instructional guidance (De Smul et al., 2020; Jones & Castellano, 2018; Harding et al., 2018). Implementation refers to the planned and deliberate practices integrating specific methods into real-world school and classroom settings (Mitchell, 2011). The effective implementation of SRL is crucial for enhancing students' self-regulatory skills and

preparing them to learn independently (Geduld, 2017). However, there is significant variability in how educational approaches are implemented in schools and classrooms (Clarke & Jarvis-Selinger, 2005). Thus, investigating the quality and features of implementation strategies is vital for ensuring positive student outcomes (Van Dyke, 2022). This section explores four key areas of focus that have emerged from the existing literature on SRL implementation: epistemological beliefs, student readiness, SRL strategy instruction, and teacher professional development. These key areas are discussed in this section and highlight areas requiring further investigation in line with the growing body of literature.

Epistemological Beliefs

Epistemological beliefs and SRL are closely related, as individuals' beliefs about knowledge can affect their ability to engage in SRL (Blackwell et al., 2007; Schommer-Aikins et al., 2005; Vosniadou et al., 2020). Therefore, understanding students' epistemological beliefs may be necessary to design interventions promoting effective SRL (Vosniadou et al., 2020). Research to date has focused on the role of both students' and teachers' epistemological beliefs concerning SRL. Students with more sophisticated epistemological beliefs tend to engage in more effective SRL strategies, while individuals with more naive beliefs may struggle to engage in SRL behaviours (Efklides, 2011; Schraw et al., 2006). Similarly, teachers with sophisticated epistemological beliefs are more likely to believe in the significance of teaching strategies related to SRL. In contrast, teachers with naive beliefs may not perceive the importance of SRL teaching efforts (Blackwell et al., 2007). However, the relationship between epistemological beliefs and SRL is complex and multifaceted (Bong, 1995). Further research is necessary to understand better how these

constructs interact to shape learners' academic outcomes (Honicke & Broadbent, 2016; Lent et al., 2019).

Despite significant research on the relationship between epistemological beliefs and SRL, there are still a lack of theoretical frameworks elaborating this relationship. To date, only general notions of the role of personal epistemology and SRL have been provided (Ji et al., 2021; Muis, 2007; Muis et al., 2018). Previous research has primarily focused on general epistemological beliefs and SRL with little exploration of their relationship in specific subject domains such as reading, science or mathematics (Greene et al., 2010; Letina, 2021; Muis et al., 2006). Additionally, most studies have been limited to undergraduate students, neglecting research on diverse populations such as primary school students (Rosario et al., 2020). Only recently, the relationship between teachers' epistemological beliefs and SRL implementation has been examined directly (Vosniadou et al., 2020). In a study conducted by Vosniadou et al. (2020), pre-service teachers who held beliefs that were theoretically aligned with SRL were more likely to recognise the significance of teaching SRL strategies to their students. Given the centrality of teachers in the educational process, it would be advantageous to undertake further studies to investigate teachers' understanding of the relationship between epistemological beliefs and SRL. Specifically, future research could explore the kind of instruction that can promote more sophisticated epistemological beliefs, particularly in the context of SRL implementation (Peura et al., 2019; Smith & Jang, 2022; Unrau et al., 2018). Such research can provide valuable insights into how teachers can design learning environments and activities that foster student SRL.

Student Readiness

The literature on SRL often refers to the *SRL application gap*, which describes the challenges teachers face when implementing SRL in real-life classroom contexts. (Cleary et al., 2022; Spruce & Bol, 2015). Although teachers generally have positive attitudes towards incorporating SRL in their classrooms, they report reservations about whether primary school children have the cognitive and metacognitive abilities required to effectively self-regulate their learning (Spruce & Bol, 2015). The complexity of identifying when a child is ready to develop SRL skills presents a typical challenge for teachers when implementing SRL (Callan & Shim, 2019; Michalsky, 2021). Zimmerman (2000) defines *student readiness* for SRL as “a student’s preparedness to engage in self-regulated learning, including metacognitive awareness, learning strategies, and executive function skills” (p. 229). Student readiness is not a static concept but is influenced by various factors, such as age, prior learning experiences, cultural background, and individual differences (Rimm-Kaufman & Pianta, 2015).

The concept of student readiness is closely related to the theoretical construct of the Zone of Proximal Development (ZPD) (Vygotsky, 1934). ZPD refers to the difference between what a learner can do independently and what they can achieve with guidance and support from a more knowledgeable other. By identifying a learner’s ZPD, educators can determine the appropriate level of challenge and support for each learner and adjust their instruction accordingly (Gaitas & Alves Martins, 2017). The consideration of student readiness and ZPD is a constructivist or student-centred approach to learning designed to assess and identify students’ current levels of knowledge (Arends, 1998; Hartle et al., 2012). It contrasts with traditional methods that often begin with concepts outside students’ range of experience (Prawat, 1992; Von Glasersfeld, 2012). While teachers commonly

report supporting constructivist approaches, many studies highlight that teachers perceive SRL as a domain not feasible to implement in the classroom due to its abstract nature and complexity (De Smul et al., 2018b). However, the belief that SRL is too abstract and complex to be feasible in the classroom contradicts constructivist teaching. It suggests that student abilities, rather than the teaching approach, are the main factor in understanding SRL. Therefore, further clarification on teachers' understanding of SRL implementation and the challenges inherent in this process are required (Pauli et al., 2007; Panadero, 2017).

While responding to student readiness is a common practice in the teaching of mathematics, science, and literacy (Pozas et al., 2020), how teachers assess the developmentally appropriate expectations for SRL is lesser known and requires further investigation (Bembenutty et al., 2015; Kunter et al., 2013; Peeters et al., 2016; Forster & Souvignier, 2014; Vosniadou et al., 2020). The few studies in this field show that teachers' ideas about assessing SRL were often based on vague evaluations such as student self-assessment, off-task behaviour, or achievement outcomes (Dignath & Sprenger, 2020). In these studies, teachers demonstrated limited knowledge of assessment instruments for SRL, and it was unclear which specific cues teachers used to identify SRL in students (Callan & Shim, 2019; Dignath & Sprenger, 2020; Michalsky & Schechter, 2018). Furthermore, identifying student readiness for SRL remains challenging, with a limited understanding of the ideas or abilities teachers consider when assessing their students' readiness for self-regulation (Callan & Shim, 2019; Dignath & Sprenger, 2020; Michalsky, 2021). Further research is required to expand our understanding of teachers' conceptualisation and ideas regarding student readiness for SRL and its assessment (Dignath & Sprenger, 2020). Despite the significance of assessing student preparedness as a basis for subsequent

pedagogical instruction, scholarly research has emphasised the various modes of strategy instruction.

SRL Strategy Instruction

Researchers have emphasised the significance of teaching students SRL strategies as a crucial *survival tool* in today's dynamic and ever-evolving society (Bjork et al., 2013; Taranto & Buchanan, 2020). In the context of SRL, strategic behaviour primarily refers to the planning, monitoring, modifying and evaluation of individual progress (Butler & Winne, 1995). Students have a diverse array of SRL strategies at their disposal, such as goal setting, task planning, self-questioning, and task prioritisation (Zimmerman, 2008; Panadero, 2017). There has been a particular emphasis on the importance of explicit and implicit approaches to SRL strategy instruction (De Smul et al., 2019; Dignath et al., 2008; Kistner et al., 2015). Explicit instruction of SRL involves the direct instruction of how, why and when to use SRL strategies (De Smul et al., 2019; Kistner et al., 2015). On the other hand, implicit instruction involves modelling or prompting learning strategies without indicating or discussing the purpose of the strategic behaviour (De Smul et al., 2019). Modelling or demonstrating specific SRL strategies is also essential among primary school students and is a significant first step for children to cultivate SRL (Paris & Winograd, 2003; Randi, 2004; Zimmerman, 1989).

Although the significance of strategy instruction has been underscored in the field, a significant issue arising from studies is the absence of frequent explicit instruction provided by teachers to foster SRL among their students (Dignath et al., 2008; Dignath-van Ewijk, 2016; Hadwin et al., 2011; Panadero & Alonso-Tapia, 2014; Spruce & Bol, 2015).

Although teachers commonly hold positive attitudes towards SRL principles in teaching and learning, they are often unable to implement SRL for several reasons, including limited

knowledge and insufficient school-based support (Steinbach & Stoeger, 2016). The central discovery arising from research has been that a limited or inadequate theoretical understanding of SRL can lead to its exclusion from teaching practices (Kramarski & Revach, 2009; Dignath-van Ewijk & van der Werf, 2012). This is particularly concerning when considering the importance of teachers' understanding of SRL and their role in promoting student learning.

The literature lacks a clear definition of the professional expertise required to implement SRL (Karlen et al., 2020). However, insights can be derived from various studies that shed light on the ways in which teachers can effectively support students' SRL. For example, research has demonstrated a strong correlation between teachers' personal competencies in SRL processes and their ability to effectively teach SRL to their students (Karlen et al., 2020). Additionally, specific areas of professional knowledge have been identified as important for teachers, such as SRL content knowledge and SRL pedagogical content knowledge. SRL content knowledge refers to a comprehensive understanding of the fundamental elements, processes and phases of SRL (Dignath-van Ewijk & van der Werf, 2012; Karlen et al., 2020; Spruce & Bol, 2015). Pedagogical content knowledge of SRL encompasses knowledge and awareness of teaching practices to support students' SRL development (Kistner et al., 2015; Barr & Askill-Williams, 2020). However, there has been a scarcity of research examining the role of SRL professional knowledge within existing models of teacher knowledge, with the focus primarily on traditional subjects, such as science and mathematics, rather than SRL (Adoniou, 2015; Barr & Askill-Williams, 2020; Karlen et al., 2020).

Implications of research in SRL stress that educators need a thorough understanding of SRL processes (Zimmerman, 2000) since students derive maximum benefit when SRL is

explicitly explained and effectively demonstrated (Dignath, 2008; Housand & Reis, 2008). However, a prevalent issue is the frequent absence of this knowledge among teachers or the limited opportunities to develop it. Consequently, current research is primarily centred on identifying the most effective means for teachers to acquire expertise in implementing SRL (Barr & Askeff-Williams, 2020; Dignath-van Ewijk & van der Werf, 2012; Karlen et al., 2020; Spruce & Bol, 2015).

Teacher Professional Development

A recurring and concerning discovery in the field is the insufficient understanding of SRL among teachers due to fragmented or limited knowledge (Cleary et al., 2022; Glogger-Frey et al., 2018; Ohst et al., 2015; Spruce & Bol, 2015). Due to these difficulties, there has been an increasing focus on Professional Development (PD) initiatives in the field of SRL and investigating how teachers can acquire the relevant professional expertise (Cleary et al., 2017; Greene, 2021; Nunez et al., 2022; Perry et al., 2015). PD in this context refers to the processes and activities used to increase teachers' professional knowledge and skills for improving student achievement (Buczynski & Hansen, 2010; Guskey, 2002). Participation in PD is crucial for enhancing teachers' knowledge, instructional methods, and overall student learning (Akiba & Liang, 2016). To gain a comprehensive understanding of teachers' PD opportunities, it is essential to investigate the various types (Akiba & Liang, 2016).

Various models of PD exist to support teachers' professional learning. For example, transmission models of PD involve a trained professional that transfers knowledge in a top-down approach (Kennedy, 2005), such as through seminars and conferences. This formal approach to teacher PD typically focuses on a distinct pedagogical method, subject-area or incorporation of technology within the classroom (Kennedy, 2005). The benefit of

transmission models lies in their systematic nature that offers teachers a clear framework to enhance their knowledge. However, a drawback may emerge from the potential lack of customisation to individual needs and diverse teaching contexts (Ader, 2019; Guskey, 2002). This limitation highlights the importance of incorporating more personalised and adaptable approaches, such as participatory approach. A participatory approach to PD involves professional co-learning in which there is no trainer-trainee relationship (Stewart & Perry, 2005), such as workshops or collaborative learning communities. In this context, teachers learn through participating and interacting directly with other colleagues. This approach focuses on experiential learning and facilitates the exchange of practical insights among teachers (Stewart & Perry, 2005). Nevertheless, a challenge may arise in ensuring that co-learning remains focused and consistent with broader educational goals (Gaines et al., 2019).

Teacher coaching is also an approach to PD that typically aims to support teachers by connecting initiative aims to individual needs and creating personalised feedback (Peters-Burton et al., 2015). This method emphasises a personalised and targeted approach that acknowledges the unique strengths, challenges, and instructional styles of individual teachers (Ryan & Bourke, 2013). It involves a collaborative effort between the coach and the teacher, with the purpose of forming a meaningful connection between the objectives of a PD initiative and the specific requirements of the teacher (Peters-Burton et al., 2015). Hence, coaching endeavors to bridge the gap between theoretical concepts and practical implementation in the classroom.

In the realm of SRL, previous research has primarily focused on measuring the effects of intervention programs among students rather than on teachers' competencies in fostering student SRL (Cleary & Zimmerman, 2004; Cleary et al., 2017; Ferreira et al.,

2017; Vandeveldel et al., 2015). Although direct SRL interventions are valuable for students, investigations into effective PD need to focus on what components of PD can develop teachers' professional expertise instead of merely targeting students' SRL practices (Dignath, 2021; Kollmayer et al., 2020). The format, duration and comprehensiveness of SRL PD programs often differ (e.g., Perry et al., 2015; Peters-Burton et al., 2017). Therefore, directly comparing PD studies in SRL is difficult due to the different methodological designs, sample sizes and training duration. Additionally, teachers' voices are often absent in studies of PD-related activities for SRL (Greene, 2021), even though their concerns and insights are among the most important to improve their practices (Cong-Lem, 2021; Perry et al., 2015).

The main findings of research in this area indicate that teachers require a considerable amount of assistance with teaching students to self-regulate (De Smul et al., 2019; Kittredge et al., 2018). Engaging in SRL PD activities can yield beneficial outcomes for teachers, enhancing their knowledge and skills while directing their attention towards improving student learning (Butler & Cartier, 2017; Cleary et al., 2022; Dignath, 2021; Steinbach & Stoeger, 2016). However, despite these positive findings, there are still unresolved aspects related to the implementation and evaluation of SRL PD programs (Kramarski et al., 2013). These aspects include the need for a more comprehensive examination of teacher outcomes and a deeper understanding of variations in teacher perspectives and responses when implementing SRL processes in real-world contexts (Cleary et al., 2022). A common downside of previous research is the absence of direct questions to teachers about their teaching and professional learning of SRL (Kittredge et al., 2018). Directly questioning teachers about their professional learning and teaching experiences could provide further insights into effective and ineffective methods for

developing teachers' professional expertise in SRL implementation (Dignath, 2021; Greene, 2021). The inclusion of teachers' perspectives is of utmost importance in their professional learning and development as educators (Hattie et al., 2021). Additionally, understanding teachers' perspectives can foster a collaborative approach to PD, where teachers' knowledge and experiences are acknowledged and utilised to enhance their ability to support students' effectively (Hattie et al., 2021).

Summary of SRL implementation

This section has presented four primary areas of the literature regarding SRL implementation: epistemological beliefs, student readiness, SRL strategy instruction, and teacher PD. While research on SRL has gained momentum in recent years, teachers' limited knowledge of SRL and its implementation remains a concern (Karlen et al., 2020). Identifying student readiness for SRL presents a significant challenge for teachers, and there is a need to explore how teachers assess and support student SRL effectively (Dignath & Sprenger, 2020). Studies have mainly targeted instructional approaches that promote SRL strategies (Spruce & Bol, 2015), such as explicit and implicit instruction. However, teachers often withdraw from these practices, and there is growing interest in PD and other interventions that can support teachers in their professional ability to implement SRL (Dignath, 2021). The literature highlights a recurring gap in exploring real-life SRL implementation methods, including teachers' perspectives, concerns, and insights (Cleary et al., 2022; De Smul et al., 2020). In addition to the aforementioned scholarly literature, the use of SRL methods to improve student development in specific subject domains is gaining increasing interest from researchers and continues to evolve (Berkeley et al., 2010; Cirino et al., 2017; Scammacca et al., 2015). The subsequent section presents literature on how SRL can improve student learning in the specific context of reading comprehension.

SRL and Reading Comprehension

One domain where SRL has gained interest is its role in improving student reading skills. For example, learners with high SRL skills exhibit better comprehension, recall, and metacognitive awareness than those without (Rakoczy et al., 2018; Karabenick & Binning, 2019; Schunk & Zimmerman, 2012). These findings suggest that SRL is a crucial component of effective reading comprehension and underscores the need for educators to teach students SRL (Erdogan & Akkaya, 2020; Lee & Schallert, 2021). *Reading comprehension* is defined as an interaction between the reader, the situation, the task, and the text that results in the construction of meaning (Gaskins, 2005; Meltzer, 2018). Further, reading comprehension is the process of extracting text with the purpose of constructing meaning (Snow, 2002). The literature on SRL implementation and reading comprehension encompasses various critical domains pertinent to the current study. This section outlines the significance of reading habits, strategy use, and SRL phases, all of which are intricately linked to SRL implementation and reading comprehension.

Reading Habits

The cultivation of positive reading habits has been associated with the development of SRL in relation to reading comprehension. A *reading habit* can be defined as the behaviours or choices concerning one's reading practices that are repeatedly carried out (Chu et al., 2020). Specifically, reading habits refer to how often, how much and what an individual reads (Bano et al., 2018). *Reading habits* develop during primary school and are pivotal in developing children's vocabulary, critical thinking skills and overall academic performance (Bano et al., 2018; Rosli et al., 2018). Supporting children's development of SRL can be effective in helping students sustain positive reading habits throughout their lives (Kumi-Yeboah & James, 2012; Lengua, 2003; Mattern & Bauer, 2014).

Teachers play an essential role in a child's development of positive reading habits (Chu et al., 2020; Dylman et al., 2020). This can be achieved by facilitating opportunities for students to read for pleasure (Bano et al., 2018), routine classroom reading (Rosli et al., 2018), storytelling (Mardiyanti et al., 2021), providing a range of reading materials and eliminating noise and distraction during reading (Ng & Graham, 2017). Specifically, the upper primary school years are a critical age for developing proficient reading skills and habits (Rutherford et al., 2018). By the time students reach secondary school, they will be expected to be able to read with high proficiency (Rutherford et al., 2018). With this expectation, teachers often place less emphasis on independent reading amidst a crowded curriculum and heavy workload (Rutherford et al., 2018). Therefore, students with poorer reading skills often fail to keep up with their peers and do not receive intervention (Snowling & Hulme, 2012). To be effective advocates of positive reading habits amidst technological and social media entertainment, teachers must remain abreast of the influences on how children sustain healthy reading habits and consciously promote them (Rutherford et al., 2018; Rosli et al., 2017). Supporting children's development of SRL can be effective in helping students sustain positive reading habits throughout their lives (Kumi-Yeboah & James, 2012; Lengua, 2003; Mattern & Bauer, 2014). Student SRL skills must be fostered at a young age through which they can consistently self-direct and manage positive reading behaviours (Chu et al., 2020).

Children with more SRL abilities can develop and maintain the internal motivation necessary for establishing reading habits through planned activities of goal setting, self-reflection, and self-monitoring (Bloom, 2013; Metallidou & Vlachou, 2007; Valenzuela et al., 2014). Further, SRL processes provide children with greater confidence and self-efficacy in their reading ability, providing internal motivation to sustain positive reading

behaviours. Additionally, when students engage in SRL strategies that require deliberate actions to direct and self-monitor their learning, they are more willing to read and cultivate reading habits (Chu et al., 2020). SRL models can also foster student motivation when they receive feedback on their learning progress when reflecting on their learning (Wigfield et al., 2011). Providing student feedback enhances motivational engagement and enjoyment of reading tasks (Guthrie et al., 2012). Overall, SRL effectively cultivates positive reading habits because it enables students to direct and oversee their learning process, adopt suitable behaviour and maintain motivation (Chu et al., 2020; Garrin, 2014; Yamada et al., 2016). However, research in this area is limited to adult or adolescent age groups and requires a more in-depth exploration amongst young children (Chu et al., 2020; Francisco & Madrazo, 2019). Effective SRL implementation can better assist primary school teachers in providing effective promotion of positive reading habits, which is especially crucial for today's generation that faces technological advances that overthrow reading time for most children and adolescents (Bano et al., 2018; Chu et al., 2020; Rosli et al., 2018; Yamada et al., 2016).

Strategy Use

The focus of research on SRL and reading comprehension has predominantly been on analysing individual components of SRL, particularly strategy use (Massey, 2009). Historically, it has been widely recognised that strategies play a pivotal role in attaining high levels of comprehension (Palinscar & Brown, 1984; Paris et al., 1983). An important question from researchers was, “do most children understand the need to strategically process information in order to understand text?” (Kolic-Vehovec & Bajanski, 2006, p. 441). Effective reading strategies have been well documented for fluent readers to use, including connecting to prior knowledge, questioning, clarifying, making predictions and

inferences, and creating mental imagery (e.g., Paris et al., 1984; Paris & Jacobs, 1984; Pearson et al., 1992).

The literature on reading comprehension has evolved from training students in a single reading strategy (Pressley, 1976; Singer & Donlan, 1982) to present students with a range of strategies (Alinsacr & Brow, 1984). With a vast amount of available comprehension strategies for students, it was later discovered that procedural knowledge of strategies is inadequate for achieving high comprehension levels (Garcia & Cain, 2014). Effectively using strategies is purposeful, effortful, and requires a motivational drive (Ng & Graham, 2017). For instance, students must select strategies, monitor their use to achieve specific goals and make appropriate changes or adjustments when necessary (Cutting et al., 2009; Sesma et al., 2009; Follmer, 2018). This subsequently directed research toward a metacognitive focus on effectively using reading strategies to equip learners with self-regulatory skills to enhance their reading (Wehmeyer et al., 2017). Several avenues exist for effectively managing strategies, such as planning, group dialogue or critical thinking (Ng & Graham, 2017). *Critical thinking* can be defined as a cognitive skill that requires deep processing strategies to analyse and evaluate information (Ignatavicius, 2001; Leung & Kember, 2003). In this way, critical thinking is also a cognitive strategy used in SRL (Zimmerman, 2002, 2008). Another example includes group dialogue activities that promote social interactions and stimulate learning (Alvi & Gillies, 2015; Gillies et al., 2012; Nastasi et al., 1990; Psaltis et al., 2009). However, studies on metacognition and strategy use do not examine SRL as a whole process in their research (Chu et al., 2020).

While strategy use is a key process of SRL, it is the combination of strategy use with the accompanying SRL phases and processes (such as goal setting, self-monitoring, and self-reflection) that form self-regulation (Panadero, 2017). Furthermore, studies later

pointed out that the effective practice of SRL is not solely dependent on strategy use. Rather, the collaborative operation of all SRL phases in conjunction with strategies constitutes SRL. According to the definitions left by early theoreticians of SRL, such as Zimmerman (1990) and Pintrich (2000), the dimensions of metacognition and strategy use are distinct constructs from SRL (Massey, 2009; Zimmerman, 1990; Pintrich, 2000). Further, it cannot be assumed that students are self-regulated learners because they use strategies since SRL involves more than strategy use (Pintrich, 2000; Zimmerman, 1990). Instead, each of the phases of SRL working together with strategy use produces SRL (Massey, 2009). Hence, the sole emphasis on strategy use is a problematic foundation for SRL and reading comprehension (Massey, 2009). The implementation of all SRL phases is crucial for effective SRL implementation.

SRL Phases

Many periphery studies have examined the role of individual subprocesses of SRL on reading comprehension, such as strategy use, metacognition or goal-setting. While such components are important features of SRL, there is a lack of research that examine all SRL phases instead of individual components (Massey, 2009; Ng & Follmer, 2017). SRL phases refer to the phases of SRL illustrated in several existing SRL models that revolve around Zimmerman's (2000) model of the complete process of SRL (i.e., forethought phase, performance phase, self-reflection phase). An example of the application of SRL as a whole process to reading comprehension presented by Sporer and Schunemann (2014) includes: i) setting comprehension goals prior to reading and planning strategies; ii) executing strategies and monitoring comprehension progress while reading; iii) determining effective and ineffective use of strategies and evaluating whether the learning goal has been reached after reading; iv) use evaluation of the task to inform future goal setting for reading

comprehension. This example illustrates the phases of SRL that employ the collective use of goal setting, strategy use, and self-reflection and demonstrates a cyclical learning process. Research on reading comprehension and SRL phases has only emerged in the last decade. For example, Sporer and Schunemann (2014) found that an SRL program significantly improved the reading comprehension performance of fifth-grade students. The influential role of SRL programs on reading comprehension was found in similar studies such as Schunemann et al. (2013) and Sporer et al. (2017). However, in these studies, SRL instruction was delivered by trained assistants instead of teachers to ensure consistency and a high level of implementation across groups of students. While these studies highlight that SRL can enhance reading comprehension in fifth-grade students, it does not provide insights into how teachers implement SRL methods.

Similarly, Cirino et al. (2017) examined SRL and reading comprehension among 4th-grade students and found that using SRL methods improved reading comprehension. In this study, SRL instruction was delivered by tutors trained in an SRL intervention program. Current research, such as Cirino (2017) and Sporer and Schunemann (2014) that more directly examine SRL as a whole structure provide insights into the potential SRL implementation has for improving student reading comprehension in primary school. Additionally, other research has confirmed a positive correlation between student SRL skills and student reading performance (Chen & Huang, 2014) and that student SRL skills predict student reading comprehension (Al Asmari et al., 2012). However, the current gaps in the literature require research on the practical application of SRL from the experiences of authentic classroom teachers. The role of the teacher is regarded as one of the most important elements for students' use of SRL (Panadero, 2017). However, teachers find SRL challenging to implement in their teaching and rarely do so (De Smul et al., 2019).

Understanding the complexities of the classroom environment, particularly the practical application of SRL as teachers engage in teaching practices, is essential for providing exemplary SRL implementation guidelines (Massey, 2009; Panadero, 2017). An important element in understanding how teachers can effectively implement SRL is understanding teachers' perspectives that guide their practice as educators (Peel, 2020). Research on how teachers understand and communicate the processes of SRL is limited (De Smul et al., 2020; Harding et al., 2018; Harding et al., 2019). Furthermore, whether and how teachers adapt instruction or support to specific phases of SRL over time and across different types of tasks requires further investigation (Hadwin et al., 2005; De Smul et al., 2019). Teaching perspectives are essential in any exploration of pedagogical practice that teachers employ (Clarke & Jarvis-Selinger, 2005). Ultimately, the literature indicates that SRL implementation has the potential to provide important contributions to the body of knowledge on the effective teaching of reading comprehension. However, a considerable amount of work is needed in the field to understand better how teachers can effectively apply SRL phases and methods as a regular part of classroom reading instruction.

Summary of SRL Implementation and Reading Comprehension

Reading comprehension and SRL are two essential aspects of academic success (Erdogan & Akkaya, 2020). Reading comprehension is not simply the product of a student's ability to decode words, comprehend oral language or their reading fluency as traditionally considered (Follmer, 2017; Wehmeyer et al., 2017). Instead, the process of reading comprehension is now predominantly linked to student aptitudes in planning, organising and self-regulation (Meltzer, 2018). The use of SRL methods to improve students' reading comprehension is gaining increasing scholarly interest, and several critical research areas have emerged. Specifically, reading habits and strategy use have

been extensively investigated and show that they are closely intertwined with SRL processes and influence reading comprehension (Chu et al., 2020; Wehmeyer et al., 2017). However, a critical gap in the research lies in the dearth of studies examining how authentic teachers apply all SRL phases in conjunction with each other to foster reading comprehension (Lee & Schallert, 2021; Sporer et al., 2017).

Conclusion

The literature reviewed in this chapter encompasses three main areas: SRL theory, SRL implementation and SRL implementation in the context of reading comprehension. Beginning with SRL theory, the existing SRL models were examined, with particular attention given to their shared components of goal-directed behaviour, strategic behaviour, self-reflection, and belief systems. Over the past two decades, significant attention has been devoted to developing and validating SRL models aimed at explaining the components involved in SRL (Panadero, 2017). The multifaceted and complex nature of SRL is evidenced by the numerous components included in the models developed, which reflect the diverse and interconnected processes of SRL (Zimmerman, 2000).

Studies have examined the impact of SRL on academic outcomes, revealing its significant role in fostering student success (Kistner et al., 2010; Zimmerman, 2013). As a result, researchers began to focus on identifying effective strategies for implementing SRL in the classroom and supporting students' development in these critical skills (Karlen et al., 2020; Vosniadou et al., 2020). The aspects explored in this review emphasise the variety of components at play in SRL implementation, including student readiness, strategy instruction and teacher PD. The main findings of research reviewed in this area indicated that teachers play a crucial role in the student development of SRL. However, teachers require considerable assistance with teaching students how to self-regulate (De Smul et al.,

2019; Kittredge et al., 2018). For this reason, understanding the differences in teachers' promotion and teaching of SRL by identifying their challenges, progress, and instructional decisions regarding SRL will significantly benefit the research and teaching in this area (Peeters et al., 2016).

Additionally, this review focused on SRL implementation in relation to improving student reading comprehension. Various approaches to improving reading comprehension were discussed to distinguish the range of components of SRL and their relevance to proficiencies in reading comprehension. The literature on SRL to improve student reading comprehension tends to revolve around three main themes. These include reading habits, strategy use, and SRL phases. Fostering positive reading habits has been linked to the enhancement of SRL with respect to reading comprehension (Chu et al., 2020). SRL plays a pivotal role in nurturing these habits by empowering students to govern and oversee their learning journey, embrace appropriate behaviors, and sustain their motivation (Bano et al., 2018). Moreover, reading comprehension has notably emphasised strategy use for student learning (Ng & Follmer, 2017). This focus has posed challenges in relation to SRL implementation research, as it is the combination of strategy use with the accompanying SRL phases and processes (such as goal setting, self-monitoring, and self-reflection) that form self-regulation (Panadero, 2017). Notably, subsequent research has underscored that the effective implementation of SRL does not hinge solely on the use of strategies and has expanded its scope to encompass all phases of SRL (Cirino et al., 2017; Sporer & Schunemann, 2014). The common feature of these recent studies is the delivery of SRL instruction by trained assistants instead of teachers. This presents a gap in the literature on how teachers can effectively implement SRL in the context of reading comprehension. Considering the range of dimensions involved in SRL, the challenge confronting classroom teachers is integrating SRL into regular classroom practices.

The present study seeks to investigate authentic teachers' understanding of effective SRL implementation and reading comprehension to address the existing gap in the literature. Understanding the complexities of the classroom environment, particularly the practical application of SRL as teachers engage in teaching practices, is essential for providing exemplary SRL implementation guidelines (Cleary et al., 2022; De Smul et al., 2020; Dignath, 2021; Kittredge et al., 2018). After reviewing the pertinent literature to this study, the following chapter will elaborate on the various components of the research design.

Chapter 3.

Research Design

Chapter Three presents the research design that guided this study, including an overview of the philosophical underpinning of the research encompassing the ontological and epistemological foundations, theoretical perspective, and methodology. The interrelatedness of these elements underscores the importance of their development in determining the appropriate methods employed for data collection and analysis. Given that this research project is centred on investigating how Grades 5 and 6 teachers understand effective SRL implementation and reading comprehension within a particular context, the principles of Classic Grounded Theory (Glaser & Strauss, 1967) provided a suitable methodology to achieve the study's objectives. By using unstructured interviews, the researcher identified emerging categories from the data, enabling a better understanding of the research phenomena from the participants' perspectives. The final formation of core categories involved further analysis, drawing on the existing body of literature to situate and compare the data with related research areas (Holton & Walsh, 2017). In presenting a more comprehensive narrative of this design, this chapter systematically explores six major sections, including the research aims and questions, philosophical underpinnings, methodology, method, trustworthiness, and limitations. Table 1 summarises the methodological approach, which will be elaborated upon forthwith.

Table 1*The Methodological Approach*

Ontology	Epistemology	Theoretical Perspective	Methodology	Method
Relativism	Constructivism	Interpretivism: Symbolic Interactionism	Classic Grounded Theory	Unstructured Interviews
Reality is subjective and differs between persons (Guba & Lincoln, 1994).	Individuals construct knowledge through interactive internal and external learning experiences (Crotty, 1998).	Individuals experience reality uniquely and construct meaning through interactions with the "objects" of that experience (Bowers, 1989).	Theory emerges from the data through a process of constant comparison (Glaser & Strauss, 1967)	Attempts to see the participants' worldview and allows their voices to be heard (Kvale, 1996).

The Research Aims

There are three broad aims of the research. They are:

1. To explore teachers' understanding of how they can acquire professional expertise for successfully implementing SRL in Grades 5 and 6 classrooms.
2. To explore teachers' understanding of effective SRL implementation in Grades 5 and 6.
3. To explore teachers' understanding of effective SRL implementation in the context of reading comprehension among Grades 5 and 6 students.

The guiding research questions that steered this study are presented below.

The Research question(s)

The research questions that guided this study seek to gain insights into teachers' perspectives on effective SRL implementation and reading comprehension, focusing on

Grade 5 and 6 students in one context. The research project explored the following overarching question: What are teachers' perspectives on effective SRL implementation and reading comprehension in Grades 5 and 6? Three guiding questions follow this, including:

1. What are teachers' understandings of how they can acquire professional expertise for successfully implementing SRL in Grades 5 and 6 classrooms?
2. How do teachers understand effective SRL implementation in Grades 5 and 6?
3. What are teachers' understandings of effective SRL implementation in the context of reading comprehension among Grades 5 and 6 students?

Philosophical Underpinning of the Research

This section aims to provide a comprehensive overview of the philosophical foundations that underpin this study. Constructing a research paradigm requires the researcher to establish a philosophical worldview that defines, (i) how knowledge is acquired and, (ii) the methods most suited for investigating and understanding the research topic (Zukauskas et al., 2018). This process involves an exploration of the ontological and epistemological foundations of the study. By examining these fundamental domains, the theoretical perspective of the study was established, and within this perspective, an appropriate methodology was selected for data collection and analysis.

Ontological Foundations

Ontology and epistemology are pertinent to undertaking research and fundamental in a researcher's attempt to generate new knowledge (Ultanir, 2012). Ontology refers to the *study of being* and is concerned with what constitutes reality (Crotty, 2015). It explains the perceptions of how things are and work. For this study, the ontological stance of relativism was adopted, which asserts that reality is subjective and varies from person to person (Guba

& Lincoln, 1994). Relativism views reality as individually constructed, and therefore that “there are many realities as there are individuals” (Scotland, 2012, p. 9). According to the relativist perspective, the social world can only be understood from individuals’ interpretations and perceptions (Cohen et al., 2007). This study investigated teachers’ perspectives of SRL implementation and reading comprehension to gain insights into their understanding and experiences in this context. By employing this ontological stance, the study sought to interpret the investigated phenomena through the participants’ perspectives.

Epistemological Foundations

Epistemology is an area of philosophy concerned with studying the nature, limit and justification of human knowledge (Hofer & Pintrich, 2004). While ontology relates to individual understandings of what is, epistemology refers to how knowledge is acquired and validated (Crotty, 2015). Many epistemological paradigms exist, with the primary theories being Positivism and Interpretivism. Three philosophical paradigms exist from interpretivism: constructivism (Piaget, 1937), constructionism (Papert, 1980) and social constructionism (Berger & Luckmann, 1966). Constructivism assumes that learners construct their knowledge individually or socially by linking new ideas with existing knowledge (Crotty, 2003). Whereas constructionism is another philosophical approach where an understanding of knowledge assumes that individuals construct meaning through their interactions in social contexts – through the engagement of “two (or more) persons” (Gunnlaugson, 2011, p. 16). When this engagement extends to broader contexts that influence those involved in the interaction, such as religious, cultural and political environments, it refers to another form of constructionism called social constructionism (Boynton, 2011; Gunnlaugson, 2011). Constructivism is a plausible fit for this study compared to constructionism and social constructionism, as this research is

interested in each teacher's unique constructed views on effective SRL implementation and reading comprehension based on their experiences, interpretations, and understandings.

Constructivism

Constructivism comes in various forms and positions, with the most common idea being that the development of knowledge requires the learner to actively construct meaning (Andrews et al., 2012). Constructivist researchers seek to construct the meaning of phenomena from the interpretations and experiences of the participants (Dickson et al., 2016). Hence, constructivism views reality as subjective. The constructivist approach aims to investigate how participants derive meaning from their experiences through reflective processes and personal analysis (Dickson et al., 2016; Hay & Barab, 2001). The primary principle of constructivism is that knowledge is not found, it is constructed (Boghossian, 2006) and that knowledge is not a product but rather a process (Joldersma, 2011). Further, constructivism defines knowledge as a developmental, subjective and an active process (Ultanir, 2012). This study's epistemological position is grounded in constructivism, as it seeks to understand how teachers construct meaning through their experiences with SRL implementation. Constructivism formed the foundation of this research's theoretical perspective and provided a valuable tool for participants to express their constructed reality (Joldersma, 2011; Lincoln & Guba, 1985).

Theoretical Perspective

The theoretical perspective adopted for this study is interpretivism, which is closely aligned with the principles of constructivism (Blumer, 1969). Given this study's focus on understanding the participant's perspectives, interpretivism is a plausible fit as it seeks to understand the meanings that individuals ascribe to events in real-life contexts, acknowledging the dynamic complexity of social interactions (Gephart, 2004). According

to this approach, individuals create and establish connections between their personal and collective meanings as they interact with the world. Consequently, interpretive researchers aim “to comprehend phenomena by assessing the significance that participants attach to them” (Orlikowski & Baroudi, 1991, p. 5).

Interpretivism

Interpretivism holds the view that participants can freely explain the experiences and insights related to their social environment (Orlikowski & Baroudi, 1991) and uses existing subjective understandings of phenomena as the basis for analysis (Goldkuhl, 2012). This perspective differs from a positivist research process which largely employs predetermined sets of variables (Gephart, 2004; Goldkuhl, 2012). The interpretive perspective is appropriate for a qualitative research study seeking insight into teachers’ perspectives on SRL implementation and reading comprehension within one context. Interpretivism enables researchers to engage with existing subjective perspectives, using them as a foundation for theoretical development (Goldkuhl, 2012). Additionally, interpretivism offers three known approaches for understanding the broader application of these subjective meanings: hermeneutics, phenomenology, and symbolic interactionism (Bleicher, 2017). This study aligns with symbolic interactionism, which emphasises the influence of social interactions on individuals’ interpretations of their experiences (Creswell, 2009; Minichiello et al., 2008). Symbolic interactionism provides a valuable lens for examining how individual teachers construct meaning and interpret their experiences of SRL implementation and reading comprehension within the social context of their classrooms.

Symbolic Interactionism

Symbolic Interactionism was founded by George Mead (1863-1931) and is rooted in Social Psychology as a social and interpretive process of the relationship between human behaviour and external stimuli. How human beings interpret and respond to situations is based on individual interpretation of the world rather than the world itself (Oliver, 2011). Further, Symbolic Interactionism upholds that individuals have multiple selves comprising two key components, the *I* and the *Me* (Mead, 1934). “Who *I* am depends on which *Me* is experienced as most salient at the time” (Bowers, 1989, p. 37). According to Symbolic Interactionism, the *Me* is the part of self that can be recognised and talked about and is “conceptualised as the object of self-reflection, while the *I* component is the reflector” (Bowers, 1989, p. 36). To apply the symbolic interactionist approach, the researcher must primarily focus on the participants’ perspectives while reflexively being mindful of their role as the researcher before interpreting the situation on which they are both reflecting (Bowers, 1989). This research project draws on the interpretivist approach of symbolic interactionism to identify and understand the participants’ perspectives in their roles as Grades 5 and 6 teachers. Symbolic interactionism served as the basis for the original principles of grounded theory established by Glaser and Strauss (1967), an appropriate methodology for this research (Aldiabat & Navenec, 2011; Oliver, 2011).

Methodology

Grounded Theory involves simultaneous data collection and analysis of a phenomenon that generates insights grounded in real-life experiences (Glaser & Straus, 1967). Like most methodologies, Grounded Theory has evolved over time, and several approaches have developed, including the classic approach (Glaser & Strauss, 1967), the systematic approach (Strauss & Corbin, 1990) and the constructivist approach (Charmaz,

2000). Each approach to grounded theory is based on differing epistemological and theoretical perspectives and principles. Among the plethora of qualitative research methods that exist for researchers to apply, research methodology should align with the philosophical underpinnings of the study to produce credible findings (Rieger, 2019). The original principles of grounded theory established by Glaser & Strauss (1967) and known as *Classic Grounded Theory* (CGT) (Aldiabat & Navenec, 2011; Glaser, 2012; Roderick, 2009), has constructivist and symbolic interactionist foundations and correspond with the philosophical stance and focus of this study's investigation.

CGT is a methodology that conceptualises what is going on for the participants using empirical data, identifying primary concerns and core categories (Glaser, 1998, 1978, 2005; Mediani, 2017). Hence, the participant's perspectives become the starting point for analysis. *Constant Comparison*, a fundamental principle of CGT, generates new insights and knowledge closely integrated with the data, contributing to understanding the effective teaching of SRL from teachers' perspectives in one context (Kenny & Fourie, 2013). The final formation of core categories involves further analysis, bringing into play the existing body of literature to situate, compare, and contrast the data with the related areas of research (Christiansen, 2011; Holton & Walsh, 2017; Walls et al., 2010). CGT aims to identify themes that represent the participants' perspectives and consists of an inductive focus of knowledge inquiry from the data, as opposed to a deductive approach that begins with a hypothesis and seeks to analyse its viability. Since induction is the key process, selecting data to fit preconceived ideas or prematurely developing ideas should be avoided (Heath & Cowley, 2004).

CGT differed from the approach suggested by Strauss and Corbin (1998), which involved using a predetermined coding system to facilitate the establishment of categories

during data collection. Glaser (1992) argued that this alternative approach could impose a structure on the data rather than allowing categories and theories to emerge through the regular review of categories. By constantly comparing the data, the study was able to refine existing perspectives and identify new concepts and theories (Glaser, 2012). Hence, the purpose of CGT is to discover and acquire new knowledge, not to prove and verify an existing theory. CGT allows for insights to emerge rather than fit a set framework. This study aims to understand teachers' constructed knowledge of SRL implementation and reading comprehension, explore their interpretations, and discover how these understandings can be applied to a broader context. Therefore, this inquiry is situated within a constructivism and interpretivism approach and is congruent with the philosophical basis of symbolic interactionism and CGT (Bowers, 1989; Glaser & Strauss, 1967; Scotland, 2012).

Data Collection To gain a deeper understanding of the participants' perspectives on effective SRL implementation and reading comprehension, unstructured interviews were conducted, which were recorded and supplemented with field notes. By adopting this approach, the participants were encouraged to identify and discuss the issues that they perceived as significant, providing rich and detailed data for analysis. The data collection and analysis method drew on CGT principles (Glaser & Strauss, 1967) and was continuously analysed to identify key insights and emerging categories. To ensure a comfortable and supportive environment for the participants to express their experiences, the interviews were held in their classrooms. This section will provide a detailed account of the methods employed in this research project, outlining the procedures used to conduct the interviews, participant selection, research ethics, and data analysis.

Unstructured interviews

Qualitative research that applies CGT principles typically employs the interview process for data collection (O'Reilly, 2012). Interviews involve a conversation between two individuals to exchange information about a specific topic (Green & Thorogood, 2018; Gubrium et al., 2012). Depending on the research purpose, interviews can be approached in different formats, including structured, semi-structured, and unstructured (Minichiello et al., 2008; Qu & Dumay, 2011). Structured and semi-structured interviews may not be appropriate for research seeking an in-depth understanding of a phenomenon as they can limit participant responses (Zhang & Wildemuth, 2009). Unstructured interviews, on the other hand, allow participants to prioritise and freely discuss issues significant to them, making them highly beneficial for research seeking to obtain a comprehensive insight into a phenomenon (Fontana & Frey, 2000; Ryan et al., 2009). They are particularly useful for research in a constructivist paradigm as they aim to understand the phenomenon from the individual perspectives of those involved (Hyden, 2014).

Using structured or semi-structured interviews may lead to biased influence or structuring that shapes the data to fit the researcher's predetermined goals (Mikecz, 2012; Simmons, 2010). Therefore, unstructured interviews were deemed the most appropriate data collection instrument for this study, as they provided the opportunity to explore the participant's experiences with the research topic in-depth, investigate participant understandings and perspectives, and ask for further detail and clarification when required. This study aims to obtain unbiased and reliable data to determine relevant categories through the use of CGT principles to identify themes and form categories (Cresswell, 2009).

Participant Selection

In accordance with CGT (Glaser & Straus, 1967), informants were selected based on their relevant knowledge of and experience in the process being investigated (Morse, 1994). For this study, , a co-educational Catholic primary school situated in the southeastern region of Victoria, Australia, was selected based on its strong emphasis on lifelong learning and SRL. The school comprises a student population of 430 and employs a staff of 52, encompassing the principal, 18 full-time and 16 part-time teachers, and 13 non-teaching staff, including 2 administration officers, 8 education support officers, and 1 library technician. Established in 1962, the school is committed to fostering an environment where Catholic Faith and values are integrated into an educational setting and cultivating academic excellence through lifelong learning. The school's overarching commitment to whole-school improvement has prompted the initiation of various initiatives that place a significant emphasis on the principles of lifelong learning and Self-Regulated Learning (SRL). These initiatives actively involve teachers in accessing and utilising appropriate professional development opportunities to implement a SRL approach in both their teaching and ongoing professional growth. This study's investigation focused on Grades 5 and 6, and all classroom teachers in these year levels were invited to participate in the study. All teachers in Grades 5 and 6 responded positively, resulting in six participants being interviewed.

In accordance with the ethical research protocols and guidelines established by the Australian Catholic University (ACU), permission to conduct this study was obtained. The ACU Ethics Committee and the Catholic Education Office (CEO) of Sale granted permission. Following this approval, the school principal was approached with an introductory information letter that clearly outlined the following regarding the present

research: the research purpose, the risks associated with the research, who will be invited to the study and what they will be asked to do, the time demand required the voluntary nature of the study and who will know the results of the study. The principal was provided with documentation to inform them of the study and indicate their approval. Specifically, they were provided with a principal information letter (Appendix A) and a principal permission letter (Appendix B).

Once the principal approved, participant information letters and consent forms were distributed to the Grades 5 and 6 classroom teachers at the school, inviting them to participate in the study. Specifically, the participants received participant information letters (Appendix C) and participant consent forms (see Appendix D), which defined the scope of the study and outlined the potential effect it may have on them. The letter also provided the identity and role of the researcher, and that confidentiality would be maintained. Signed consent forms were obtained from the participants prior to their involvement in the study, acknowledging their agreement with what they were participating in and their awareness of the associated risks.

Research Ethics

Ethical research considers the needs and wellbeing of the people under investigation and ensures the research is conducted with the appropriate ethical oversight (Mack et al., 2005). While any risk of harm to participants is rare in qualitative research, agreed-upon standards for qualitative research ensure there is no threat to those we study (Mack et al., 2005). To ensure ethical practice, six fundamental principles of research ethics were applied to the study, including informing participants about the purpose of the study, voluntary participation, maintaining confidentiality, informed consent, respect for persons, and power relations.

Although no foreseeable risks were anticipated for this research, every effort was made to ascertain personal safety and the wellbeing of the participants as a priority over the research goals. This low-risk study contained topics of research that were not deemed sensitive or likely to bring embarrassment or distress. However, the participants may experience discomfort from being in an in-depth unstructured interview for an extended period. Accordingly, the participant information letter and consent form explicitly stated that participation in this study was voluntary and that they were not obligated to participate. The participants were also informed that they had the right to withdraw from the study at any point without any adverse repercussions, and they were not obligated to provide a reason for their decision to withdraw. The written consent forms disclosed the following: what will be involved in the study; confidentiality; and voluntary participation (Patton, 2002; Creswell, 2009). The participants were informed that confidentiality would be maintained by ensuring that any identifiable locators in transcripts would be removed and that codes would be used for all personal details to protect participant identity (Creswell, 2009).

Additionally, qualitative research settings introduce issues of power, given the researcher has power or a degree of control over participants within the research relationship (Gottfried, 1996). It is widely acknowledged that power relations potentially introduce ethical complexities and biases that must be addressed (Das, 2010). While recognising that complete elimination of power dynamics is unattainable in research, this study employed measures to address and alleviate potential power imbalances such as transparency of outcomes and procedures, and confidentiality (Fontes, 1998). Additionally, the participants were afforded the opportunity to provide informed consent, mitigating some of the inherent power issues associated with the research process (Das 2010). Another

similar concern involves structural power relations, which produce further issues concerning power ethics (Das, 2010). For instance, if the researcher interviewing teachers in this study was in a place of leadership at the school, such as the year-level leader or the principal, leading to further ethical complexities. However, the researcher had no organisational power, personal or professional affiliation with the school or teachers selected to participate in the study, eliminating this ethical concern.

Conducting the interviews

This study interviewed teachers in their classrooms either before or after class. The location was chosen to provide participants with a neutral and safe environment (Baker, 1965). The perspective of symbolic interactionism guided this approach by focusing on the role of participants as Grades 5 and 6 primary school teachers. Conducting interviews in their teaching environment can help to reinforce the connection between the participants and the research topic (Crotty, 2003, 2015). A protocol was developed to ensure the effectiveness and consistency of each interview (See Appendix E). At the start of each interview, the participants were reminded of the contents of the information letter, the interview's unstructured nature and the audio-recording procedures. The participants were invited to decline participation based on their discretion. The interview then commenced by inviting the participants to discuss their perspectives on effective SRL implementation and reading comprehension. This approach ensured that the participants determined the priority and order of issues to be discussed, providing valuable insights into what they deemed important. Furthermore, this approach prevented the researcher's pre-existing ideas from influencing the discussion (Glaser, 1978; Qu & Dumay, 2011).

By allowing the participants to discuss the topic freely, they could identify their constructed meanings and perspectives without the prompting or guidance of the

researcher. This approach aligned with the principles of CGT that allow the participants to determine the agenda for interviews. The participants were then invited to expand on each topic they presented. If the discussion deviated from the core focus of the study, prompts from a checklist were used to redirect the conversation. These prompts were open-ended and designed to be invitational to avoid any potential researcher bias during the interview. Once the participants had nothing further to share regarding each topic, they were invited to discuss any additional aspects of SRL implementation and reading comprehension they deemed relevant. Field notes and memos were taken throughout the interview to record important sections and categories as they emerged (Glaser, 2011). In CGT, note-taking is essential to analyse data and identify relationships among the categories. Note-taking was integral to the data collection and analysis phases. Taking notes whenever an idea or thought arises facilitates conceptual thinking rather than descriptive analysis (Hale & Phillips, 2018). Each participant underwent a single interview session, and there were no subsequent or follow-up interviews required.

Transcribing interviews

The researcher had approval from the participants to audio-record the interviews, and the data was transcribed verbatim. While audio recordings are not essential to grounded theory methodology (Glaser, 1998), this approach ensured the researcher had a detailed record of the participant's responses and served as a mechanism for member checking. This enabled the participants to verify the accuracy of the recorded conversations, ensuring fidelity between what was heard and what was said. Each participant was afforded the opportunity to review the transcripts and offer any necessary clarifications or proposed changes. Following the review process, no participants expressed a need for modifications to the provided transcripts. Hence, the transcripts enabled the researcher to verify the

accuracy of the data collected and minimise any potential researcher bias. They also allowed the researcher to revisit the data during the analysis when required.

Storage and Safety of the Data Collected

The data was collected in the form of audio recordings and transcripts saved as Word documents. The Word documents and audio recordings are stored in an ACU-protected server, and backup copies are stored in CloudStor during the project. The audio recordings were stored in a separate password-protected folder from the transcriptions to protect participant confidentiality. The use of coded identities protected the participants and any persons referred to in the interviews. The transcripts deidentified the participants applying alphabetical codes (e.g., POC, POE, POF).

Data Analysis

The process of data analysis is a crucial aspect of qualitative research, allowing researchers to make sense of the data they have collected and to develop theoretical propositions that explain the social phenomenon under investigation (Charmaz, 2014; Glaser & Strauss, 1967; Strauss & Corbin, 1998). After each interview, the audio recording was transcribed and analysed to identify core categories. These were evaluated based on their relevance to the participants' perspectives on effective SRL implementation and reading comprehension. Identifying core categories in this manner allows researchers to develop a rich and nuanced understanding of the social phenomenon under investigation and identify the key insights and relationships important to the participants (Charmaz, 2006). This data was then scrutinised to identify subcategories that formed the basis for further analysis. A further analysis explored the categories and subcategories of findings in greater depth and detail by drawing on the existing body of literature (Chametzky, 2016; Glaser & Strauss, 1967). The following section provides a detailed overview of the

emergence of categories, the emerging findings, and the subsequent further analysis of those findings.

The Emergence of Categories

To identify categories and subcategories from the data, an extensive process of continual evaluation was undertaken, known as *constant comparison* (Andrews et al., 2012; Birks & Mills, 2015; Glaser, 1998). This process involved systematic comparison of data “sentence by sentence” to generate a wealth of concepts and their relationships (Glaser, 1998, p. 24). Furthermore, the researcher refrained from predetermining the topics or categories to be explored. Instead, the researcher constantly compared the emerging themes and viewpoints from the interviews and identified the categories that reflected the participants' perspectives (Hallberg, 2006).

The process begins with the first data collection during the initial interview. As the interviews progressed, the researcher continued to compare new emerging categories with previously identified ones refining and developing the categories further (Scott, 2009). The researcher ensured that the emergence of categories was not forced or biased by verifying all ideas generated by comparing themes in old and new data (Glaser, 1978). Continually checking the core categories against the original data ensured that the researcher's conceptualisation of the categories reflected the themes that emerged from the data, providing the study with crosschecking and triangulation. Hence, constant comparison minimises the potential for researcher bias and prevents previously held views from shaping or forcing the emergence of categories and is described by Chamarz (2000) as the “self-correcting nature of the data collection process” (p. 522).

The researcher identified sections of the interviews related to each category and organised them into tables that reported the emerging categories, transcript excerpts, and

coded identities of participants (Appendix F). A separate table was created for each core category, and as constant comparison continued, categories and subcategories evolved in clarity, accuracy, and conceptual complexity (Glaser, 1998). The researcher further examined the categories to create subcategories and verified them continually to generate new insights and knowledge (Appendix G). This recursive data comparison process continued until no new or additional areas of a category needed further exploration (Andrews et al., 2012), marking the point of conceptual saturation and finalisation of a category (Holton & Walsh, 2017; Moore, 2010). Within general qualitative research, the term *saturation* refers to descriptive saturation. However, saturation in grounded theory research refers to saturation at a conceptual level (Breckenridge & Jones, 2009). Thus, constant comparison of the data continued until the point at which categories were sufficiently dense, and no new insights emerged (Glaser & Strauss, 1967). At the end of the constant comparison process, the constructed table presented a comprehensive synopsis of insights the participants considered important concerning the research topic.

The Emerging Findings

In the writing up phase of the research, an overview of the categories and associated subcategories was composed before conducting a more detailed analysis. In CGT, these are referred to as the *emerging findings* and represent the concepts, categories, and relationships that emerge from the data during constant comparison (Glaser & Strauss, 1967; Strauss & Corbin, 1998). These findings are grounded in the data and reflect the perspectives and experiences of the participants in relation to the research topic. The emerging findings are presented in the relevant findings' chapters and are discussed in terms of how the participants perceived and understood the insights identified in each category and associated subcategories. Illustrative quotes from the participants are utilised

as support. To ensure adherence to ethical considerations for this research, a coding system was implemented to remove any identifiable information related to the participants.

Further Analysis of the Data

Once the categories and subcategories were addressed, the researcher further analysed the data by drawing on the existing body of literature (Glaser & Strauss, 1967). During this point of data analysis in CGT, the literature is examined to identify relevant research and explore connections and comparisons with core categories (Glaser, 1998). Reviewing the literature once core categories are established allows the researcher to frame the study's findings with the broader context of related research (Glaser & Strauss, 1967; Deering & Williams, 2021). Furthermore, it enables the researcher to connect previous research and theories with the present study's properties, concepts and constructs, validating emerging bodies of knowledge (Gibson, 2007; McCann & Clark, 2003). The two-phase iteration can be clearly observed in the data analysis Chapters, Four, Five, and Six. These chapters follow a specific structure where they first present the emerging findings related to a specific category without going into extensive analysis or interpretation. This serves as a preliminary overview of the emerging findings within that category. After presenting these emerging findings, the chapter transitions into a more detailed examination of the data. This occurs in the sections titled *Discussion and Further Analysis*. This section of the findings chapters provides a more comprehensive analysis and interpretation of the findings within the given category. This is a more extensive iterative data analysis process than typically pursued for the reasons outlined below.

Reviewing the literature placed the findings in the broader research context, providing the researcher with a more precise lens to examine the data (Chametzky, 2016). As a result, new perspectives emerged, allowing for a deeper understanding of the

participants' experiences and perspectives. Hence, literature relating to core categories supported the development of new understandings and insights (Christiansen, 2011; Konecki, 2018). The comparison between the participants' perspectives and the literature is conceptual and, therefore, cannot be assessed until the emerging categories are finalised and occur at this final stage of analysis (Holton & Walsh, 2016; Wall et al., 2010). Situating the findings of this study within the body of related literature also demonstrated how the study built upon and extended previous research. In this study, the existing literature relating to the categories of findings contributed to developing theoretical propositions and a substantive conceptual model that encapsulated the participants' understanding of effective SRL implementation and reading comprehension. The model presents a concise summary of the study's critical findings and their interrelationships.

Trustworthiness

Research 'validity' and 'rigor' are terms commonly used in quantitative research to describe the quality of a study and if its findings can be trusted contributions to the broader field of research (Morse et al., 2002). However, in qualitative research, Lincoln and Guba (1985) and Denzin (1985) have described the quality of findings and outcomes in terms of its trustworthiness. There are four key criteria that Denzin (1985) has put forward to establish trustworthiness: credibility, transferability, dependability and confirmability. This section will describe these components and how they were applied to this research.

Credibility

Credibility in qualitative research pertains to how consistent and accurate the research findings are (Ary et al., 2010). Techniques aimed at supporting credibility of qualitative research include prolonged engagement, persistent observation, triangulation of data sources and member checking (Korstjens & Oser, 2016). However, not all strategies

are suitable for every study (Korstjens & Oser, 2016). This study focused on triangulation, referring to how the researcher can approach the research topic from various perspectives, providing a range of viewpoints (Denzin, 2012; Flick, 2007). This is an appropriate avenue for the credibility of this study, since it is argued that CGT's method of *constant comparison* provides researchers with an in-built means of triangulation that promotes credibility (Kushner & Morrow, 2003), as it seeks to verify participant ideas and themes (Holton, 2010). The process of constant comparison will support the credibility of the findings of this study by evaluating data from different participants regarding the same core category to ascertain shared and differing aspects within the data (Glaser, 2008). The study not only aimed to uphold credibility in research but also addressed the transferability of the findings to other contexts.

Transferability

Transferability refers to whether the findings of research would apply to other contexts and concerns the aspect of applicability (Ary et al., 2010; Lincoln & Guba, 1985). Its purpose is to allow the reader to evaluate whether research findings are transferable to their own setting (Kushner & Morrow, 2003). This indicates that the reader, not the researcher, makes the judgment about the transferability of the study, as the researcher does not know the reader's specific settings (Kushner & Morrow, 2003). The researcher is therefore required to provide thick and rich descriptions of the participants and research process to assist readers in making judgments about the study's transferability (Kushner & Morrow, 2003). To address transferability, this study provided detailed descriptions of sources and strategies, methods of data collection and analysis, decisions taken, and interpretations reached (Hadi & Closs, 2016). Providing these details seeks to exhibit truthfulness in the findings and ultimately aid the reader to assess the degree to which the

conclusions made by this study are transferable to other situations, settings, and groups (Hadi & Closs, 2016). Additionally, the dependability of the findings was addressed to establish the reliability of the insights and recommendations derived from the research.

Dependability

Dependability is concerned with consistency and ensuring the analysis process is in accordance with the accepted standards for a design and can be replicated (Cope, 2014; Kushner & Morrow, 2003). This involves adapting the research methods to fit the context of the study and ensuring that the processes used for the study are clearly documented. In this study, due diligence was taken to record and transcribe the interviews accurately. The interviews were digitally recorded and transcribed into text to ensure an accurate account of the participants' words. During and immediately after the interviews, notes were also taken to ensure consistent records were produced. After the final categories of the research findings were finalised, the literature review acted as an external reference against which the findings were analysed and compared (Ary et al., 2010; Glaser, 1998). Additionally, the dependability of the research findings reflects on whether the new knowledge and implications presented by the researcher are neutral and unbiased. This is further addressed in the confirmability of the study.

Confirmability

Confirmability refers to eliminating bias in the analysis and interpretation of the data (Ary et al., 2010). CGT's in-built mechanism of *constant comparison* assists the researcher in scrutinising evidence of bias in research by verifying the participant ideas and themes (Reiger, 2019). In accordance with CGT, researchers ought to have as little preconceived notions, thoughts and ideas as possible, during the time of data analysis to maintain their role as "detached observers" (Rieger, 2019, p. 4). The goal of this study was

to eliminate researcher bias through the constant comparison method (Glaser, 2002), as “comparative analysis both subsumes and assumes verification and accurate description” (Glaser & Strauss, 1967, p. 28). This ensures the emergent insights will be a true representation of the participant’s realities (Glaser, 2002; Reiger, 2019; Thomas & James, 2006). The process of constant comparison “makes the generated theory as objective as humanly possible” (Glaser, 2002, p. 5). The constant comparison method applied to the data collection and analysis was a key mechanism for addressing confirmability of this study.

Limitations and Delimitations of the Research

As with most studies, the present study is subject to limitations. This research is limited to a single Victorian Catholic Primary school. As a result, some aspects of public Victorian schools or other Australian Primary School contexts are not accounted for in this study. This limits the generalisability of the findings to Victorian Catholic Schools who implement SRL in their teaching and learning practices. Such issues are addressed in qualitative research in terms of transferability. The researcher intends to provide thick and rich descriptions to assist the reader in assessing the extent to which the study findings are transferable to other groups.

Additionally, certain delimitations exist in the current study. The research was restricted to the teachers’ perspectives and experiences with SRL implementation. No quantitative methods were used to gather data of SRL implementation within the school or of students’ academic skills, as these methods are not consistent with Classic Grounded Theory and have the potential to force the data (Glaser & Strauss, 1967). Engaging in an examination of the school’s programs, student academic abilities or SRL skills were avoided. This resulted from determining that the research focus was on how participants

understood effective SRL implementation rather than concentrating on specific outcomes. The use of unstructured interviews provided this research with the relevant data collection of the participants' perspectives. This study focused attention on the insights that the participants identified as relevant to effective SRL implementation and reading comprehension. Additionally, the selection of the participants in the study was restricted to Grades 5 and 6 teachers. This range was chosen due to the degree of variance in student abilities and SRL strategies across primary school age levels and the complexity involved in accounting for this. One primary school level was chosen to focus on gaining a deep understanding of SRL and reading comprehension among Grades 5 and 6.

Conclusion

This chapter presented a comprehensive research design, which outlines a rigorous and systematic approach to address the research questions and achieve the study's objectives. The reasoning behind selecting the approach and strategies for collecting and analysing the data is explored and outlined. The research design is underpinned by a significant relationship between its epistemological, theoretical, methodological, and research methods components. An understanding of these design elements informed the selection of appropriate data collection and analysis processes and techniques.

The data collection method was unstructured interviews conducted in a comfortable and supportive environment to encourage the participants to convey their perspectives openly. The principles of Classic Grounded Theory (Glaser & Strauss, 1967) were an ideal approach for this study that sought to investigate six Grades 5 and 6 teachers' understandings of: 1) how they can acquire professional expertise in SRL implementation; 2) what constitutes effective SRL implementation; 3) what constitutes effective SRL implementation in the context of reading comprehension. CGT was a valuable approach for

this study's objective of developing new knowledge grounded in the realities of authentic classroom teachers. This process was inductive, as the researcher was guided by the data continually when identifying emerging insights and understanding the research phenomena (Glaser & Strauss, 1967; Speziale & Carpenter, 2007). The researcher developed the study findings by analysing and comparing the emerging findings generated by the participants and the broader body of existing literature (Mediani, 2017). By using this methodological framework, this study aimed to provide theoretical propositions and a substantive model of the participants' understanding of effective SRL implementation and reading comprehension.

This research design was crucial in ensuring that the study could generate reliable and valid data to be analysed to answer the research questions and contribute to the existing body of knowledge in the field. The trustworthiness of the research has been explored and discussed based on key criteria that Denzin (1985) has put forward to establish trustworthiness, including credibility, transferability, dependability, and confirmability. The research limitations have been presented. The subsequent chapters will present the research findings, presenting the emergent categories of data and further analysis of these categories concerning the literature reviewed in the previous chapter.

Chapter 4.

Findings Related to Category One: SRL Professional Development

Chapters Four through Six present the findings generated from the participants' perspectives on SRL implementation and reading comprehension. The research drew on the principles of Classic Grounded Theory to conceptualise the emerging categories of data (Glaser & Straus, 1967). Categories and subcategories emerged through an extensive process of constant comparison of the interview transcripts (Andrews et al., 2012; Birks & Mills, 2015; Kelle, 2010). Three distinct categories were identified, each with associated subcategories. The three categories and subcategories are displayed in Table 2.

Table 2

Categories and Subcategories That Emerged From the Study

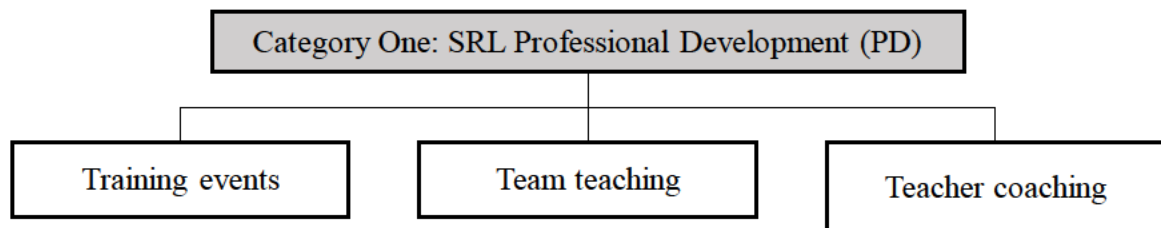
Category	Subcategories
One: SRL Professional Development	Training events Team teaching Teacher coaching
Two: Preparing Students for Effective SRL Strategies and Phases	Developing students conceptual understanding of SRL Addressing students' beliefs about the nature of knowledge and learning Promoting the relevance of SRL
Three: SRL Phases and Reading Comprehension	The forethought phase and reading habits The performance phase and group dialogue The self-reflection phase and individual learning

This chapter reports on the first category of findings related to SRL-focused Professional Development (PD) opportunities for teachers. PD refers to the processes and

activities used to increase teachers' professional knowledge and skills for improving student achievement (Buczynski & Hansen, 2010; Guskey, 2002). To achieve successful SRL implementation in teaching, it is crucial to identify the PD approaches that can best support teachers' professional expertise (Cleary et al., 2022; Dignath, 2021; Nunez et al., 2022). This category underscores the importance placed by the participants on the role of different approaches to PD they received. Three subcategories within Category One were identified: training events, team teaching and teacher coaching. These findings are displayed in Figure 3.

Figure 3

Category One: Category and Subcategories



This chapter starts by presenting the emerging findings generated from the interviews with primary school teachers participating in this study. An overview of the emergent insights concerning each subcategory is presented before analysing them in greater detail. The data is discussed in terms of how the participants considered and conveyed the significance of SRL-focused PD. Illustrative quotes from the participants are utilised as support. Consistent with the ethical considerations for this research, a coding system has been employed to remove any identifying features of the participants.

In the subsequent section, the scholarly literature is used to provide further analysis of the insights that emerged from the data (Deering & Williams, 2021). It provides a deeper

understanding of the participants' perspectives on SRL-focused PD and contextualises these findings within the broader framework of SRL research. The chapter culminates with a summarised overview of the findings, including a diagrammatical representation.

Chapters Five and Six continue in this vein, focusing on Categories Two (Preparing Students for Effective SRL Strategies and Phases) and Three (SRL Phases and Reading Comprehension).

Category One: SRL Professional Development

Training Events

This subcategory captures the meaning that the participants have constructed around the significance of SRL training events on their ability to implement SRL effectively. The participants identified two characteristics of SRL training events. Firstly, each training event centred on a specific topic related to SRL and was firmly focused on theory.

Secondly, a skilled professional in the field delivered the events regularly to the participants (monthly half-day sessions). The participants described this approach to PD as foundational to their understanding of SRL processes and their intricate association with reading comprehension. Specifically, the training focused on the phases and processes of SRL facilitated by Zimmerman's (2000) model. A comprehensive exploration of Zimmerman's (2000) model is presented in the literature review chapter (pp. 31-57).

Training events were important because SRL was an area of education that the participants believed required expert guidance and theoretical underpinnings; these were important for the participants to recognise and grasp before implementing SRL into their classrooms. POB illustrates this view expressed by the participants:

It has a deep background in psychology that you need to understand when looking at self-regulation and reading comprehension. We cannot teach what we do not know, and

we needed those training sessions from a proper expert to have something to base our teaching on.

SRL-based training events were a long-term school initiative implemented for one year at the time of this study. The school intended to continue these events on an ongoing basis. Therefore, this PD provided opportunities for the participants to reflect deeply on SRL theory. POB noted: “One session will not do anything because it is not something you can learn overnight. It takes time.” The participants emphasised once-off training events as inappropriate for SRL-related PD due to the complexity of the topic.

The participants reflected upon their knowledge before receiving SRL training and identified misconceptions. Accurate knowledge about SRL processes was crucial in their ability to teach SRL effectively. This knowledge included the phases of SRL and how they relate to reading processes: “Lifelong learning is something you hear a lot and can seem like an airy-fairy topic. I realise now that I did not understand the components behind it and how it related to reading” (POE). POE also highlighted the reasons behind a lack of SRL knowledge: “None of us received information on this (SRL) during our education. That is why the training was so important.” Hence, the critical importance of training events for the participants was the SRL content focus.

Training events were a practical starting point for the participants to begin making curriculum decisions about SRL. However, theoretical knowledge alone was insufficient for the participants. They affirmed that this knowledge required further development through experiences in the classroom, which deepened their understanding of how to address the teaching of SRL. The following section unpacks the manner in which the participants believed that team teaching was a meaningful way to achieve a collective sense of SRL in the classroom.

Team Teaching

Team teaching activities were an influential space for the participants to transfer SRL theory to the classroom context collectively. The teachers involved in this study would engage in team teaching arrangements from time to time where classrooms were combined. Three teachers and their respective students would work in an open-plan classroom, and team teach a lesson incorporating SRL principles. While a range of team teaching models exists, the arrangement in this study involved a collaborative and shared teaching experience; Each teacher co-planned, co-instructed, and co-assessed a group of students. It is important to emphasise that, in their day-to-day instructional practices, the teachers functioned within traditional classroom settings. Nevertheless, for team-teaching initiatives, they merged classrooms to create an open-plan instructional environment, fostering collaborative opportunities among teachers.

The participants collectively linked theoretical knowledge of SRL and teaching through sharing knowledge, peer observation and peer feedback. The participants emphasised the effectiveness of acquiring knowledge from colleagues due to their varying experiences and skills. This perspective shared by the participants is illustrated in the following comment:

Training events are crucial for understanding SRL, but then you need to practice applying it - which is a whole different ball game! Many questions occurred during this time because you are working with such diverse students on a complex topic. We (teachers) each have different strengths and areas of expertise that we can learn from. Team teaching helped us learn new things we could then take and use in our lessons. (POC)

The participants' focus during team teaching was to consider effective teaching practices based on SRL theory. The participants would experiment with approaches and observe each other's teaching. The main benefit of team teaching was observing other professionals during practice and sharing feedback.

Team teaching was a unique opportunity for the participants to receive collegial support with SRL implementation that was directly related to their students. The participants specifically emphasised the effectiveness of team teaching in addressing the specific learning needs of students. POD described the challenges of SRL and student diversity: “identifying self-regulation in students is tricky and not as straightforward as Maths or English. During team teaching, we could assess students together and deepen our understanding of how students may differ in how they express self-regulation.” Team teaching was attributed to a deeper understanding of student differences in SRL and how to manage students' individual SRL abilities effectively.

By working with other teachers to target SRL for a specific group of students, the participants differentiated and adapted SRL theory to the unique needs of their classroom. Therefore, regular team teaching provided a deeper exploration of SRL topics that were sensitive to the distinctive needs of their students. This finding highlights that team teaching supported the participants' capacity to meet the diverse needs of students in SRL. Aside from team teaching, the participants emphasised the importance of teacher coaching, discussed in the following subcategory.

Teacher Coaching

Teacher coaching was a meaningful experience that stimulated practical teaching approaches to SRL. In this context, regular one-on-one meetings between teachers and the school curriculum leader characterised teacher coaching. Teacher coaching allowed the participants to receive individualised attention for their PD based on their strengths or challenges. However, an integral part of teacher coaching was to provide a context where teachers can apply SRL to their learning. Teacher coaching was guided by Zimmerman's (2000) forethought, performance, and self-reflection phases of SRL.

The teachers could liaise with their coaches about their teaching goals, strategies, and challenges with teaching SRL and receive feedback. This was an opportunity to assess how SRL functions from a learner's perspective. The comment below illustrates that perspective:

Each student has different abilities, skills, and strengths. I realised we are not experts in SRL and never will be because SRL is an evolving process. We partner with students on the same lifelong learning journey. I would never have come to that realisation without the coaching. (POC)

As a result of teacher coaching, the participants gained more profound knowledge of how SRL functions and felt better prepared to make curriculum choices about its implementation. Teacher coaching increased the participants' opportunities to practice being self-regulated and receive feedback.

The opportunity for teachers to engage directly with SRL processes stimulated additional knowledge of SRL. POF provides an example of the relationship between their experiences with SRL and their approach to teaching SRL: "For me, persistence was a big part of my learning journey. So that is something I wanted to focus on in my class because I realised that they might also need to learn how to persevere during challenging tasks." By becoming aware of how they responded to SRL, the participants developed deeper insights into students' learning needs for SRL.

Personal experiences with SRL processes were fueled through teacher coaching activities that connected learning SRL and teaching SRL. The coach was perceived as a support for SRL processes and a source of feedback. While experiencing SRL on a personal level, the participants forged a deeper understanding of SRL theory that promoted improved professional judgements about its implementation in the classroom.

Overview of The Emerging Findings of Category One

As demonstrated in the previous sections, Category One captures the meaning the participants have constructed around SRL-focused PD experiences. For the participants in this study, a range of PD opportunities was central to their teaching and significantly contributed to their professional expertise in SRL implementation. The approaches to PD the participants identified included training events, team teaching, and teacher coaching. The significance of training events was due to their content focus, as they provided the participants with a theoretical background of SRL on which they could base their teaching practice. This was an important opportunity for the participants to discover SRL models and processes. Team teaching was a space for the participants to transfer SRL theory to the classroom context collectively. It allowed the participants to explore teaching SRL to a diverse group of students through interchanges with other teachers. Teacher coaching was grounded in the participants' active role as self-regulated learners. The opportunity for teachers to engage directly with SRL processes stimulated practical teaching approaches to SRL. The skills acquired from PD were essential for effectively teaching SRL, and consequently, for facilitating student learning.

Discussion and Further Analysis of Category One

The following section offers a discussion and further analysis of Category One. As previously reported, the emerging findings revealed that SRL-focused PD opportunities were central to the participants' understanding of effective SRL implementation. The emerging findings are further analysed in the following section by drawing on scholarly literature. This further analysis highlighted critical areas of professional knowledge that pertained to the participants' understanding of PD and how it contributed to their acquisition of professional expertise necessary to implement SRL in Grades 5 and 6 classrooms successfully. The areas of professional knowledge identified in this section

include SRL content knowledge, SRL pedagogical content knowledge and knowledge of performing SRL. These are discussed in this section and aim to explore the teachers' understanding of effective SRL implementation.

SRL Content Knowledge

SRL training events gave the participants critical knowledge of SRL concepts and processes. The assertion that “we cannot teach what we do not know” (POB) resonates with the enduring recognition of teachers' *content knowledge* in the areas they teach as an essential prerequisite for their profession (Ball et al., 2008; van Driel et al., 2014). In this context, content knowledge refers to teachers' understanding of domain-specific knowledge of a specific subject (Shulman, 1987). Content knowledge regarding SRL relates to teachers' knowledge of SRL concepts, models, and processes (Karlen et al., 2020). For the participants, training events led by a skilled facilitator were an essential opportunity to deepen their understanding of SRL: “Lifelong learning is something you hear a lot and can seem like an airy-fairy topic. I realise now that I did not understand the components behind it and how it related to reading” (POE). Hence, SRL training events were considered by the teachers involved in this study as a significant opportunity to gain *SRL content knowledge*.

The SRL training events described by the participants resembled transmission models of PD involving a trained professional that transferred knowledge in a top-down approach (Kennedy, 2005). Many scholars are skeptical about transmission approaches to PD and their effectiveness in promoting change in teachers' practices (Ader, 2019; Guskey, 2002). However, the participants revealed gaps in knowledge and the importance of being educated on SRL theory. Furthermore, prior to receiving any SRL theory in PD, the participants felt unsure how to teach SRL or how to link it to reading comprehension lessons: “We really needed those training sessions from a proper expert to have something

to base our teaching on” (POB). Fragmented or limited teacher knowledge of SRL is a prominent and concerning finding in the field (Cleary et al., 2022; Glogger-Frey et al., 2018; Ohst et al., 2015; Spruce & Bol, 2015).

The participants highlighted that SRL content knowledge was not included in their pre-service training and other formal education. As a result, the participants recognised their limited knowledge and misconceptions of SRL preceding their engagement in school-prescribed training events. Other studies support this concern and have shown that teachers from various educational levels lack knowledge about SRL (Askell-Williams et al., 2012) and find it challenging to define metacognitive strategies (Glogger-Frey et al., 2018; Ohst et al., 2015). This also reflects common concerns regarding the absence of SRL processes from educational standards and curricula, which has implications for what pre-service teachers learn and how in-service teachers work (Greene, 2021). Teacher misconceptions and limited awareness are crucial problems, as student development of SRL relies heavily on teacher knowledge (Karlen et al., 2020; Ohst et al., 2015; Panadero, 2017). The teachers involved in this study shared this concern. They highlighted the importance of opportunities to consider the theoretical perspectives of SRL as it is a complex and new educational initiative that requires specific knowledge and approaches that differ from traditional teaching practices (Panadero, 2017).

A critical insight regarding training events from this study was its content focus and the significance of its ongoing nature. The participants emphasised that once-off training events were ineffective for acquiring sufficient SRL knowledge. SRL was conveyed as complex, with many components requiring regular revision. During supplementary training events, the participants could revisit topics and consolidate their knowledge: “One session will not do anything because it is not something you can learn overnight. It takes time”

(POB). Hence, this study emphasises how repeated training events were considered essential to the participants' acquisition of SRL content knowledge. Another vital insight included the role of the events' facilitator: "We really needed those training sessions from a proper expert to have something to base our teaching on" (POB). The opportunity to receive training events that a skilled facilitator delivered was important to the participants due to the theoretical and abstract nature of SRL.

These findings highlight that the participants, in their role as teachers, understood training events as a critical opportunity for acquiring SRL content knowledge, as it was a neglected topic in their former education. This problem is a common and widespread issue (Greene, 2021). The training events involved a transmission approach to PD that provided the participants with regular opportunities to revise SRL content knowledge, which was an essential foundation for their inquiry and teaching. While the effectiveness of transmission approaches is disputed (Ader, 2019), there were other approaches to PD the participants received. The participants understood SRL training events as a foundation of critical knowledge that set the stage for team teaching activities. Team teaching used teacher inquiry to support the implementation of SRL content knowledge in the classroom. The participants' perspectives on team teaching are further analysed in the next section.

SRL Pedagogical Content Knowledge

The participants attributed team teaching to an enhanced ability to implement SRL. The goal of the participants was to make SRL content knowledge accessible to students via effective instructional strategies and practices. This is referred to as *pedagogical content knowledge* (Shulman, 1987). Further, pedagogical content knowledge of SRL goes beyond a conceptual or theoretical understanding and includes knowledge about different instructional methods for teaching and supporting student SRL in the classroom (Karlen et

al., 2020; Paris & Paris, 2001). Despite the participants' perceived importance of the training events, they conveyed the challenge of incorporating this knowledge into their teaching practices: "But then you need to practice applying it - which is a whole different ball game!" (POC). This is consistent with research highlighting the common *SRL application gap* among teachers (Cleary et al., 2022; Spruce & Bol, 2015). This well-known phrase throughout the literature refers to the common difficulties teachers experience when attempting to apply SRL to real-life classroom contexts.

While there is a strong body of literature on the components of effective pedagogical content knowledge in mathematics, science and literacy, the development of teacher pedagogical content knowledge for SRL is less clear (Dignath-van Ewijk, 2016; Karlen, 2020; Moely et al., 1992; Spruce & Bol, 2015). By working with a team of teachers, the participants expressed an increased ability to collaborate on assessing students' SRL and ideas on how to support them in improving their abilities: "You would never have thought of that scenario to discuss with your peers, for example, because it's hard to predict how students will manage self-regulation. With team teaching, you get to collaborate right at that point of need" (POA). Hence, team teaching was perceived as an important opportunity for the teachers involved in this study to gain *SRL pedagogical content knowledge*.

Team teaching is considered a participatory approach to PD and is characterised by professional co-learning in which there is no trainer-trainee relationship (Stewart & Perry, 2005). Teacher SRL intervention studies based on participatory models confirm the positive effects of collaboration between teachers (Perry et al., 2015) and between teachers and researchers (Cartier et al., 2010). However, the participatory approaches in such studies commonly demonstrate collaboration through regular team meetings between parties. In

this context, a significant difference between *team meetings* and *team teaching* was the opportunity for teachers to witness SRL teaching processes in context: “You get to watch other teachers in action, which is a rare opportunity” (POA). The participants highlighted the added advantage of observing teachers during practice as a deeper involvement in the situated nature of teaching that requires contextualised decision-making attributed to student diversity. PD opportunities related to team teaching in the context of SRL implementation is an underexplored area (Greene, 2021; Perry et al., 2015). Rather than merely discussing approaches, it was the opportunity to collaborate in the context of a real-life lesson that propelled the participants’ professional learning. Hence, a key benefit of team teaching for the participants was its distinct ability for teachers to learn from each other’s practice and explore the SRL of their shared students.

The participants indicated that team teaching also assisted them in diversifying SRL instruction. Specifically, they highlighted the difficulty in assessing student SRL and the extreme degree of student differences in self-regulation: “A key thing for us was learning how to identify student self-regulation. Students express it differently and each range so drastically” (POA). Team teaching increased the participants’ ability to identify student needs and develop instructional strategies to support a diverse range of students. While responding to student diversity is a common practice in school systems (Pozas et al., 2020), how teachers can cater for student diversity in SRL abilities is lesser known and requires further investigation (Díaz & Eisenberg, 2015; Farooq & Asim, 2020; Jaramillo et al., 2017; Li et al., 2017). Due to the complexity of developing effective SRL instructional strategies and practices for students with a wide range of needs and abilities, team teaching activities need to be performed regularly and on an ongoing basis. The participants emphasised the development of expertise in SRL as a long-term process. This highlights

that for the participants to feel prepared for the challenging task of SRL implementation, they required time to experiment and familiarise themselves with SRL approaches sensitive to student diversity.

The key findings indicate that the participants understood team teaching as expanding their *SRL pedagogical content knowledge*. The opportunity for teachers to observe teachers during practice expanded their knowledge of instructional approaches to developing student SRL. Collaborating in an on-the-job manner allowed the participants to share knowledge and ideas that were context-relevant and supported them in identifying student needs and diversifying instruction accordingly. While team teaching played a crucial role in the participants' SRL pedagogical content knowledge, they also highlighted the importance of teacher coaching. This approach to PD is addressed in the next section.

Knowledge of Performing SRL

The opportunity for teachers to engage in teacher coaching on SRL was considered a critical process that enhanced their SRL implementation. Teacher coaching is an approach to PD that typically aims at supporting teachers by connecting initiative aims to individual needs and receiving personalised feedback (Peters-Burton et al., 2015; Ryan & Bourke, 2013). Coaching is characterised by a professional mentor working individually with a teacher via frequent meetings or classroom observations (Kraft et al., 2018). In this study, teacher coaching was facilitated by the school curriculum leader and involved regular one-on-one meetings. This form of PD allowed the participants to individualise their learning of SRL and receive ongoing support. Additionally, there was a repeated emphasis on this form of PD being a regular and ongoing experience: "Because it was monthly, it keeps you focused on it too" (POC). The participants indicated that coaching maintained their focus on being self-regulated learners and accumulated more profound knowledge of SRL.

There is a growing body of literature that examines the importance of teacher coaching as an emerging area of interest for providing personalised attention to individual teachers (Kraft et al., 2018). The unique perspective of this study is that teacher coaching was designed to facilitate the participants' teaching of SRL and their experiences as self-regulated learners. Here, teacher coaching was a context for the participants to apply SRL processes toward their learning with the encouragement and feedback of their coach. The participants described this process as identifying personal and professional learning goals, designing plans to address these goals, and making adjustments based on coaching advice and feedback. As a relatively new field, the role of teacher coaching in developing teachers' PD of SRL is an under-researched area (Kramarski & Kohen, 2017). Teacher coaching was considered a vital opportunity by the participants that enabled them to practice being successful self-regulated learners. Hence, teacher coaching gave them insights into effective SRL from a learner's perspective.

The participants reported that practicing SRL enhanced their awareness of the relevant challenges faced during SRL and specific techniques for applying strategies effectively. As a result, the participants felt better prepared to implement SRL effectively: "from my own SRL, I realised how important the emotional components are, such as persistence. So that's something I wanted to focus on in my class, helping my students to persevere during challenging tasks" (POF). This relates to growing research emphasising that for teachers to develop student SRL effectively, they must first be able to enact self-regulated learning processes toward their learning (Kareln, 2020; Kramarski & Kohen, 2017; Porter & Peters-Burton, 2021). Although existing studies have provided evidence for the important relationship between teachers' SRL and their ability to teach SRL, they do not explicitly focus on how to support teachers' SRL skills, with intervention studies

notably lacking (Dignath & Buttner, 2018; Karlen et al., 2020; Kramarski, & Kohen, 2017). In this study, the participants regarded teacher coaching as contributing to their personal SRL skills that provided important insights for their teaching.

An example of an essential insight into SRL experienced during coaching was a more profound recognition of the nature and principles of SRL theory. The participants connected their personal growth in SRL to propositions of lifelong learning and individual progress: “We are not experts in SRL and never will be because SRL is an evolving and endless process. Therefore, we are partners with students on the same lifelong learning journey” (POC). Such comments from the participants align with the purpose of SRL as a lifelong learning approach to sustain learners in an ever-changing world (Taranto & Buchanan, 2020). PD must foster teacher knowledge of approaches to SRL that are conducive to its core perspective of learning (Dignath, 2021; Karlen et al., 2020; Vandious et al., 2020). Hence, teacher coaching influenced the participants to reorientate student learning to focus on individual progress instead of a competitive group of standards. “Each student has such different abilities, skills and strengths. I realised that self-regulated learning is about helping them to reach their full potential by being self-aware and having the strategies they need to reach their goals” (POC). These findings highlight that engaging with SRL on a personal level deepened the participants’ understanding of the principles they could apply to their teaching.

The key findings indicate that the participants attributed teacher coaching to their development as self-regulated learners that informed their teaching. Specifically, teacher coaching enabled the participants to develop further insight into practical approaches for enhancing student SRL. In this manner, teacher coaching extended upon the training events and team teaching approaches to PD by individualising their progress and providing them

with further insights on performing SRL. Having discussed the different approaches to PD that the participants emphasised as contributing to their professional ability to implement SRL, an overview of the findings of Category One are discussed below.

Overview of the Further Analysis of Category One

The further analysis related to Category One highlighted that the participants recognised the significance of particular domains of professional knowledge for the successful implementation of SRL in the classroom. They also acknowledged the crucial role multiple school-based PD approaches played in acquiring this essential knowledge. Specifically, the participants highlighted the importance of teachers receiving training events that targeted SRL content knowledge, team teaching that supported SRL pedagogical content knowledge and teacher coaching that fostered knowledge of performing SRL.

The acquisition of SRL content knowledge through training events facilitated by a proficient instructor was considered indispensable for the participants. Due to the intricacy of SRL and its deviation from conventional teaching practices, the participants acknowledged that ongoing SRL training events were imperative in bridging their knowledge gaps and equipping them with the necessary skills to instruct students on self-regulation. The participants regarded one-off training events as inadequate in providing them with sufficient content knowledge. Hence, they stressed the importance of regular training sessions, preferably every month. SRL content knowledge formed the fundamental groundwork for the participants to conduct their investigations and explorations on teaching SRL effectively. Furthermore, it provided a platform for productive team teaching, which leveraged teacher inquiry and collaborative teaching to facilitate the successful implementation of SRL in the classroom.

Although SRL training events received emphasis, the teachers reported the challenge of incorporating SRL content knowledge into their teaching practices. The teachers felt more prepared for this challenging task when they were given time to experiment and familiarise themselves with SRL approaches with other teachers. Hence, the inclusion of team teaching into their PD was attributed to an enhanced ability to make SRL content knowledge accessible to students via effective instructional strategies and practices. The critical advantage of team teaching was that it allowed teachers to collaborate with their peers in the context of real-life lessons, thereby enhancing their SRL pedagogical content knowledge. Moreover, the opportunity for teachers to observe other teaching colleagues during practice facilitated the sharing of context-relevant knowledge and ideas, which supported teachers in identifying student needs and diversifying instruction accordingly. Additionally, participating in teacher coaching further refined the participants' SRL teaching approach.

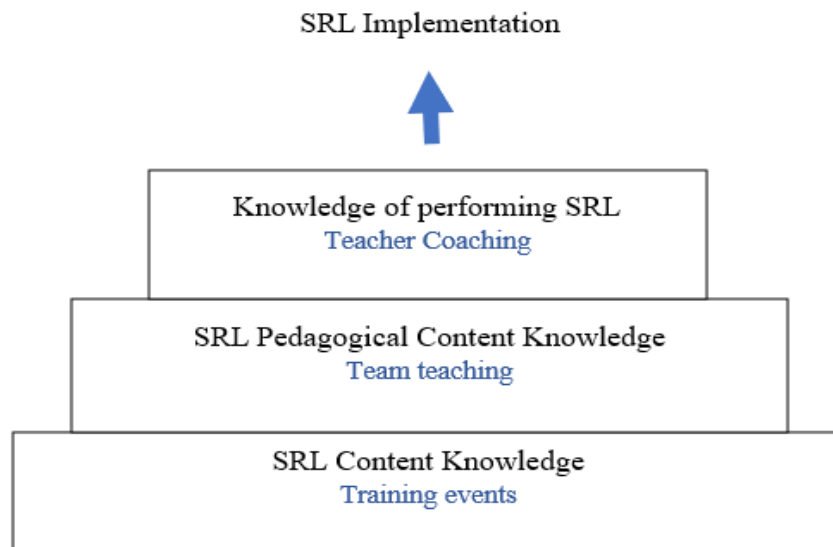
Teacher coaching was characterised as ongoing monthly one-on-one meetings with a professional mentor who worked individually with each teacher in a context that allowed them to gain personal experience with applying SRL processes with the encouragement and feedback of their coach. The participants reported that gaining personal experience with the SRL strategies they were teaching led to significant gains in their knowledge of how to perform SRL. This experience also enhanced their insight into the relevant challenges faced during the enactment of SRL processes and, therefore, their ability to provide practical approaches to SRL during their teaching. The continuous and ongoing nature of each PD approach was considered essential, given the time and effort required to develop the professional expertise deemed pertinent to SRL implementation by the participants. According to the participants, the idea of one-off PD experiences downplayed the

significance of the professional learning and knowledge required for effectively teaching SRL.

While the participants elucidated specific domains of professional knowledge linked to particular PD approaches, it is crucial to acknowledge the potential synergies resulting from the simultaneous engagement in multiple PD forms. The interplay of each PD approach may collaboratively enhance SRL content knowledge, SRL pedagogical content knowledge, and knowledge of performing SRL, with possible dynamic interrelationships connecting them. However, this study underscores that the teachers involved in this study consistently emphasised a focal area of professional knowledge for each PD, aligning with the core thematic focus of that specific PD. This emphasis, as highlighted by the participants, significantly contributed to their professional expertise in implementing SRL. Figure 4 visually depicts how the participants viewed several PD approaches as a series of steppingstones that facilitated the acquisition of professional knowledge necessary for effective SRL implementation.

Figure 4

Overview of the Further Analysis of Category One



Conclusion and Summary of Findings Relevant to Category One

This chapter has presented and analysed the first category and associated subcategories that emerged from the data. This category encompassed different approaches to PD that were highlighted by the teachers in this study, including training events, team teaching and teacher coaching. The chapter's discussion centred on these emerging findings and has provided valuable insight into the teachers' perspectives on experiences they considered as equipping them to deliver effective SRL implementation. The chapter attempted to link the discussion and analysis of these findings in relation to existing literature and found that the participants' insights on PD involved critical areas of professional knowledge, including SRL content knowledge, SRL pedagogical content knowledge, and knowledge of performing SRL. Furthermore, the study highlights how the teachers involved in this study understood the nature and purpose of PD programs for acquiring professional expertise in SRL implementation.

This study highlights that for the teachers in this study, developing professional expertise in SRL implementation went beyond the scope of a singular PD opportunity or a prescribed number of hours, as has been the focus of research in the field (Cleary et al., 2022; Dignath, 2021; Greene, 2021). Until recently, most studies on PD and SRL focus on a single approach to PD and are heavily based on researcher-designed interventions (Dignath, 2021; Heirweg et al., 2021) and do not investigate the effects of multiple approaches to PD on teacher outcomes. Additionally, insights into teachers' perspectives on the matter are lacking (Dignath, 2021; Greene, 2021). The findings in this category offer valuable insights into teachers' perspectives on the gradual process of teacher development in SRL implementation. They highlight the necessity of employing diverse PD approaches to acquire specific knowledge deemed essential for effective SRL implementation. The PD interventions encompassed a combination of transmission, participatory, and coaching approaches involving training events, team teaching, and teacher coaching. Each approach played a critical role in acquiring a distinct type of knowledge: training events facilitated SRL content knowledge, team teaching fostered SRL pedagogical content knowledge, and teacher coaching enhanced the knowledge of implementing SRL. These three approaches were understood as laying the groundwork for the participants to develop professional expertise in implementing SRL. Chapter Five presents the data and an analysis of Category Two, which reports on the teachers' perspectives on preparing students for effective SRL strategies and phases.

Chapter 5.

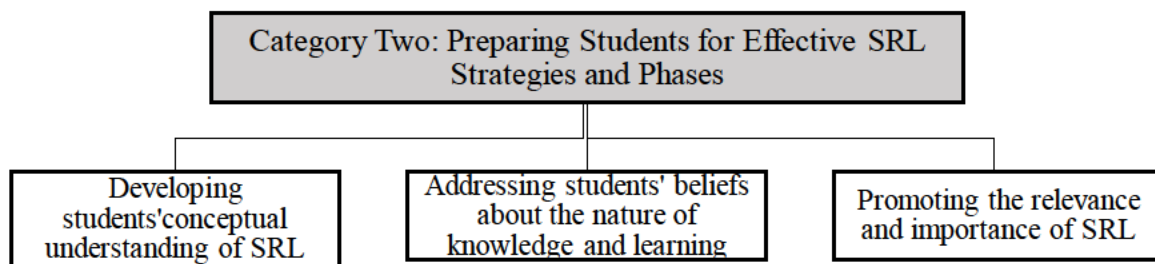
Findings Related to Category Two: Preparing Students for Effective SRL Strategies and Phases

This chapter reports on the second category of findings related to how the participants understood SRL implementation and reading comprehension. SRL implementation refers to the planned and deliberate practices carried out by teachers to integrate SRL into classroom settings and enhance students' self-regulatory skills (Geduld, 2017). A key challenge for teachers is that many curriculum and policy documents, including the Australian curriculum (ACARA, 2022), promote the ideals of SRL capabilities but do not outline its everyday classroom teaching or content (Peel, 2020). Therefore, it is unsurprising that there is a growing demand for research to gain a deeper understanding of teachers' approaches to implementing SRL (Dignath & Buttner, 2018; Rajabi, 2012). The findings reported in the following sections attempt to address this gap and specifically explore how the teachers participating in this study understood effective SRL implementation.

The research employed the principles of Classic Grounded Theory (Glaser & Strauss, 1967) to identify the categories and subcategories of findings. Three subcategories within Category Two (Preparing Students for Effective SRL Strategies and Phases) were identified: developing students' conceptual understanding of SRL, addressing students' beliefs about the nature of knowledge and learning, and promoting the relevance of SRL. These findings are displayed in Figure 5.

Figure 5

Category Two: Category and Subcategories



An overview of the emergent insights concerning each subcategory is first presented. The data is discussed in terms of how the participants considered and understood effective SRL implementation in Grades 5 and 6. The findings are supported by references to the participants' interview transcripts.

In the subsequent section, the scholarly literature is used to provide a further level of analysis of the insights that emerged from the data. It serves to provide a deeper understanding into the participants' perspectives on SRL implementation and contextualise these findings within the broader framework of SRL research. The chapter culminates with a summarised overview of the findings, including a diagrammatical representation.

Category Two: Preparing Students for Effective SRL Strategies and Phases

Developing Students' Conceptual Understanding of SRL

This first subcategory captures the meaning the participants have constructed around the significance of students' conceptual understanding of SRL. Before introducing SRL-specific pedagogical changes into the teaching routines of the classroom, the participants emphasised the importance of students developing a coherent understanding of the meaning of SRL and recognising it in different contexts. The data clearly identifies that the process of activating students' prior knowledge was pivotal to developing their conceptual understanding of SRL.

The overall teaching objective amongst the participants was expressed as: “The goal is that they truly grasp what SRL is about – the ability to understand how our minds learn and striving for excellence” (POB). This objective arose from concerns that students were not equipped with the foundational knowledge necessary to practice SRL effectively. POE captured the essence of these concerns when describing the use of SRL strategies: “Their (students’) understanding was quite limited, so we cannot just jump into specific strategies. We needed to get them ready first, and they needed to understand what SRL is before trying to put any strategies into practice” (POE). The participants noted that while cognition and behaviour are regulated regularly throughout life, their students’ understanding of self-regulation in an academic setting was not well established. There was a shared concern that students would adopt procedural knowledge of strategies without understanding the process or purpose of SRL. This response illustrates the view expressed by the participants:

If we want the students’ use of SRL to be long-lasting, they need to understand what it actually is. Sure, they can copy the strategies we give them, but will they understand why they are doing them, and will they use them in a different context without us asking them to? Definitely not. So, it becomes all about the groundwork we do. Also, even students who practice good self-regulation sometimes are not even aware that they are. They must be aware of what they are engaging in during those moments. That is the whole point.” (POA)

POE expanded on this, acknowledging that SRL strategies change based on the subject domain: “SRL looks different in each subject. They need to have a sound understanding first before moving to subject strategies. We need to fix any misunderstandings they may have before going any deeper.” The connotation amongst the participants was to enhance students’ conceptual understanding of SRL to ensure their enactment of strategies was deliberate and meaningful.

The participants’ reflections embodied the notion that students’ current levels of knowledge were a vital starting point for their teaching, as evidenced in the following comment: “We had first to explore what they already knew and start with what they were

already familiar with. What is their thinking? Where are they at? What are their questions?” (POB). As the participants described activating students’ prior knowledge, it became evident that this served two purposes. First, students’ prior knowledge provided the participants with an indication of students’ current levels of knowledge. Second, it allowed students to construct connections between old and new knowledge.

The participants presented students with clear examples of everyday and familiar self-regulation practices. POD reflected on some scenarios of SRL posed to students “We discussed how they may or may not practice self-regulation in the morning to get to school, or when someone cuts in the line at lunch, or when they focused on a specific goal.” These examples progressed to more specific examples of SRL in the classroom. Progressive examples allowed students to link everyday self-regulation practices and more classroom-specific circumstances, with POA suggesting: “Then [they] applied those same aspects to the classroom to see if they could make links between general self-regulation and self-regulation of learning.” Hence, the participants aimed to develop students’ conceptual understanding of SRL by linking their current knowledge levels and new SRL content.

By way of conclusion within this subsection, it is evident that a vital component of the participants’ approach to SRL implementation was to develop students’ conceptual understanding of SRL by activating their prior knowledge. It was important that students first understood the concept of SRL prior to being taught any specific strategies. To build student understanding of SRL, the participants promoted connections between what students already knew or experienced in daily situations of self-regulation and SRL in the classroom. Additionally, the participants detected a considerable problem with some students’ pre-existing beliefs and assumptions regarding the nature of knowledge and learning. Therefore, the participants also addressed students’ learning-related beliefs, which are discussed in the next section.

Addressing Students' Beliefs About the Nature of Knowledge and Learning

This subcategory highlights how the participants perceived learning-related beliefs as impacting the degree to which students understood and practised SRL. Specifically, beliefs that learning was quick, effortless, and unteachable were considered to hamper students' understanding and use of SRL. Therefore, students needed to engage in opportunities to identify and challenge their beliefs about knowledge and learning. The participants employed Zimmerman's (2000) model of SRL as a catalyst for students to consider the nature of learning.

Understanding the nature of learning was regarded as a critical agent influencing student SRL. The role of active participation in the learning process was critical for students to understand. POE noted:

Many students think that the ability to learn is quick and effortless. They think our job is to perform some sort of magic spell and make them learn. They think it is something that happens to you. We needed to help them realise that learning cannot happen without their effort and work.

Students' learning-related beliefs were stimulated by presenting Zimmerman's (2000) model of SRL, as explained by POF: "Zimmerman's model was very user-friendly for Grades 5 and 6. Each phase insinuates a positive understanding of learning, such as the control we can have over our progress and the many things we can do to achieve our goals." It would appear that the participants considered that presenting this model to students would simultaneously raise their understanding of SRL and strengthen specific beliefs about the nature of learning. POB, along these lines, stressed that: "It is important they view learning correctly. This ensures they are motivated to be self-regulated learners. Also, teaching SRL helps them to understand how learning works. They go hand in hand." Students needed to be equipped with an understanding of SRL and appropriate learning-related beliefs before proceeding to learn specific strategies: "Students cannot process the

vast number of strategies all at once. It becomes impossible to stay on track. They need a core understanding and the right mindset first” (POE). Hence, the participants perceived a reciprocal relationship between SRL and beliefs about learning.

The participants encouraged students to reflect on each phase of Zimmerman’s (2000) model and examine what it revealed about the nature of learning and if they agreed. POF described the importance of this activity: “Each phase insinuates a positive understanding about learning. But there is something more powerful about directly addressing it and challenging students to recognise and rethink their views” (POF). The participants’ descriptions made it evident that addressing students’ beliefs about learning resulted in positive learning outcomes, as explained by POB: “With each phase, you could see the difference in students when they had to make their beliefs explicit and address them and think, hmm...do I need to reconsider this?” POF reflected on how self-identifying beliefs about learning were necessary:

These (learning-related beliefs) were crucial to let students address and adjust before going any further. It was a great opportunity for students to identify their point of view in a safe environment and try to justify it. Backing up their argument is where they really had to think if this was really what they believed and if it was plausible or not.

Hence, students’ beliefs needed to be made explicit and subject to self-evaluation prior to the introduction of SRL-centric pedagogies.

Addressing students’ beliefs about learning played an essential role in the participants’ implementation of SRL. Students’ beliefs about the nature of knowledge and learning were considered to impact their understanding and use of SRL. Offering students the opportunity to express and challenge their learning-related beliefs was vital to the implementation process. Alongside these beliefs, the participants’ implementation was also influenced by students’ perceived relevance of SRL, which is discussed in the next section.

Promoting the Relevance and Importance of SRL

A vital component of the participants' approach to SRL implementation was to deepen student learning by promoting the relevance and importance of SRL. This entailed highlighting to students the value of SRL across various contexts. Providing students with the opportunity to identify the relevance of SRL relative to their interests and goals was critical to their learning and engagement.

While conceptual learning addressed what SRL is, promoting its relevance highlighted why it was worth learning. The participants observed that students question what they are being taught and constantly ask: "But what am I going to use this for? Or what does this have to do with me?" (POF). Therefore, students needed to establish why SRL was important and beneficial. POB described the significance of students having a sense of purpose during classroom tasks, a sentiment shared by the participants: "If a student does not understand the reasons behind our classroom activities, it is not going to sink in, and they are not going to put in as much effort." The participants reported that students connected SRL with various pursuits when provided with examples of SRL in practice. POD summarised this insight: "We wanted that light bulb to go off and for them to realise they can use SRL to improve their learning of anything! This includes improving their sporting abilities, playing an instrument, or learning a new language." Furthermore, students needed to perceive SRL as a mastery over the learning process that they could apply to many interests such as sports, music, and art. Such an understanding would address the importance and usefulness of SRL both in and outside the classroom.

The participants understood that students also wanted to be connected to their learning. They considered how SRL could become increasingly relevant when students had opportunities to connect it to their personal interests and goals, evidenced in comments such as: "They (students) needed to see the benefits of SRL for their life. We made time for

them to link SRL with their goals in and outside the classroom” (POB). The participants often exemplified how opportunities for students to specify a unique and personal significance to SRL increased its relevance. POF illustrates how SRL was made relevant to students by tailoring it to their individual needs and preferences: “You really needed to appreciate their differences and that area of their life they wanted to apply SRL, whether that be a sporting achievement or better friendships.” Assigning relevance to SRL went beyond showing students why it was important and involved opportunities to determine its value based on their personal interests.

The participants believed that a crucial aspect of SRL implementation is enabling students to understand the relevance of SRL. The participants perceived more significant learning outcomes when students could grasp a sense of relevance in relation to their own needs. SRL activities became meaningful to students when they could examine why it was worth learning, how it functioned in the real world, and how it related to them personally.

Overview of the Emerging Findings of Category Two

As demonstrated in the aforementioned sections, three distinctive subcategories emerged that contributed to the participants’ understanding of effective SRL implementation. These included: developing students’ conceptual understanding of SRL, addressing students’ beliefs about the nature of knowledge and learning, and promoting the relevance of SRL. Developing students’ conceptual understanding of SRL was an essential foundation for learning SRL skills and strategies. Activating students’ prior knowledge was a critical method to achieve this and included identifying students’ current levels of knowledge and promoting connections between old and new knowledge. Equally important to students’ conceptual understanding were their beliefs about the nature of knowledge and learning. An essential part of the implementation process was allowing students to identify and examine their learning-related beliefs. Finally, meaningful and purposeful learning was

achieved when students could recognise the relevance of SRL concerning their interests and goals. Students needed to receive intentional opportunities to examine why SRL was worth learning and how it related to them personally.

Discussion and Further Analysis of Category Two

The following section offers a discussion and further analysis of the findings from Category Two. As previously reported, three distinct subcategories emerged from the data. Importantly, this section positions these findings within a discussion that draws upon associated scholarly literature. As a result, key components pertaining to student readiness and SRL implementation were identified, including conceptual knowledge, sophisticated epistemological beliefs, and personal relevance. These areas are discussed in this section and aim to provide deeper insights into the participants' understanding of effective SRL implementation.

Conceptual Knowledge

A vital component of the participants' approach to SRL implementation was to develop students' conceptual understanding of SRL by activating their prior knowledge. Such an approach contrasts with traditional methods that often begin with concepts outside students' range of experience (Prawrat, 1992; Von Glasersfeld, 2012). Activating students' prior knowledge is a constructivist form of learning designed to assess and identify students' current levels of knowledge (Arends, 1998; Hartle et al., 2012). The participants discussed bridging the gap between what students already understood about self-regulation and SRL in an academic context. This focus resonates with a critical principle of constructivism: a learner's experiences and schemata determine what they are ready to learn (Ultanir, 2012).

Students were presented with examples to assist the transfer of knowledge that extended what students knew about self-regulation in one context to new contexts. In describing the activation of prior knowledge, the participants used phrases that refer to preparing students to learn SRL strategies effectively. Some of these included “we need to get them ready for it first of all” (POE), “it becomes all about the groundwork we do” (POA) and “it is important they have a familiar foundation to learn from” (POD). These emerging teaching objectives illustrated that the participants were concerned that students would become dependent on teacher-driven procedures rather than their knowledge and motivation. This concern further echoes a constructivist teaching orientation that provides students adequate preparatory knowledge before progressing to specific skills (Ultanir, 2012).

The intention to develop prerequisites or preconditions before advancing students to SRL strategy instruction continually emerged from the data. These ideas relate to notions of *student readiness* which propose that for learning to occur, students need to receive moderately challenging instruction by remaining suited to their current levels of knowledge (Gaitas & Alves Martins, 2017; Paris & Byrnes, 1989; Ultanir, 2012). This notion is also supported by the theoretical construct of the Zone of Proximal Development (Vygotsky, 1934), which represents a developmental threshold for learning new information based on current knowledge levels (Paris & Byrnes, 1989). Therefore, the findings reveal that the participants understood effective SRL implementation as identifying and developing student readiness for strategy use.

The participants’ objectives not only evidenced a focus on student readiness but also provided the prerequisites for identifying student readiness. The key prerequisite that emerged was distinguished by the participants’ aims at fostering students’ conceptual understanding of SRL: “The goal is that they truly grasp what SRL is about – the ability to

understand how our minds learn” (POB). This aim refers to conceptual knowledge, which involves the principles and ideas describing a concept (Tulving, 1985). Constructing conceptual knowledge is also essential to constructivism, as it centres around student thinking and sense-making (Levy, 1983; Lampert, 1989). The participants often reiterated a focus on ensuring that students understood the key ideas and principles of SRL prior to engaging with specific strategies: “Sure, they can just copy the strategies we give them, but it will just become a robotic process for them, where they are not even aware of what they are doing and why” (POE). This focus indicates that the participants were not concerned with assessing students’ SRL aptitudes as indicators of student readiness, such as self-monitoring accuracy or appropriate use of strategies. The participants considered how well students’ conceptualised SRL as an essential indicator of student readiness.

The participants demonstrated a constructivist-orientated understanding of SRL implementation based on identifying and building student readiness. While responding to student readiness is a common practice in the teaching of mathematics, science, and literacy (Pozas et al., 2020), how teachers assess the developmentally appropriate expectations for SRL is lesser known and requires further investigation (Bembenuddy et al., 2015; Kunter et al., 2013; Peeters et al., 2016; Forster & Souvignier, 2014; Vosniadou et al., 2020). The teachers involved in this study drew their inferences of student readiness for SRL based on their conceptual knowledge. Correct conceptualisations of SRL were considered foundational to students’ long-lasting and effective use of SRL strategies and aptitudes. Therefore, the participants’ instructional goals aimed at exploring what sense students were making of SRL and important ideas they may be grappling with. The participants further demonstrated these considerations when addressing students’ beliefs about the nature of knowledge and learning, which are discussed in the next section.

Sophisticated Epistemological Beliefs

Addressing students' beliefs about the nature of knowledge and learning played an essential role in the participants' understanding of SRL implementation. Beliefs about the nature of knowledge and learning are known as *epistemological beliefs* and have been extensively researched (Hofer, 2002; Pintrich, 2002). Epistemological beliefs can be identified on a continuum that ranges from naive to sophisticated (Schommer, 1990). Naive beliefs refer to views that learning is a fixed ability and unchangeable. In contrast, sophisticated epistemological beliefs refer to views that learning is a dynamic process that can be developed (Winberg et al., 2019). In this study, the participants identified their students' inaccurate learning assumptions, which are associated with naive epistemological beliefs: "Many students think that the ability to learn is quick and effortless. They think our job is to perform some sort of magic spell to make the learning happen" (POE). The participants indicated that addressing these beliefs influenced students' long-term and effective use of SRL.

The participants employed Zimmerman's (2000) model of SRL to develop and strengthen specific epistemologies: "Each phase insinuates a positive understanding about learning. But there is just something more powerful about directly addressing it and challenging students to identify and rethink their views" (POF). Hence, this model was considered to stimulate students' thinking about the nature of learning. It was crucial to the participants that students self-evaluated and challenged their learning-related beliefs. Many studies support the relationship between epistemological beliefs and SRL behaviour (Barnard-Brak et al., 2011; Greene et al., 2010; Lawson et al., 2019; Muis, 2007; Vosniadou et al., 2020). Research has considered that students may need to hold certain epistemologies to successfully employ SRL (Greene et al., 2010; Muis, 2007). However, few studies have addressed teachers' instructions of epistemological beliefs to improve

SRL and the conditions under which they have reported them as changing (Valanides & Angeli, 2005; Vosniadou et al., 2020). While Zimmerman's (2000) model has been widely used for the instruction of SRL strategies in many intervention studies, its use for promoting epistemological beliefs by teachers is lesser known (Lawson et al., 2019).

An example of using Zimmerman's (2000) model to consider epistemological beliefs and the reported outcomes by the participants was indicated in comments such as: "With each phase, you could see the difference in students when they had to make their beliefs explicit and address them and think, hmm...do I need to reconsider this?" (POB). The participants often described how opportunities for students to evaluate, question and challenge their views on learning resulted in effective student outcomes. When using Zimmerman's (2000) model, it appears that the participants focused on the quality of student thinking and reasoning rather than explicitly teaching specific beliefs they wanted to reinforce. An example of the participants' emphasis on student thinking is recalled below.

It was a great opportunity for students to identify their points of view and try to justify them. Backing up their argument is where they really had to think if this is what they believed and if it was plausible or not. (POF)

Attentiveness to student thinking is one of the defining features of constructivist-orientated teaching (Prawat, 1992).

The participants emphasised students' beliefs as foundational and a preparatory requirement for learning SRL strategies: "It becomes impossible to stay on track with each strategy. They (the students) need a core understanding of learning and the right mindset first" (POE). This reiterates the participants' understanding of SRL implementation as identifying and building student readiness for using SRL processes. Therefore, the data suggests that the participants also thought of student readiness in terms of sophisticated epistemological beliefs. The participants' emphasis on their students' reasoning abilities

within the context of epistemological beliefs also showcased their understanding of how to promote student readiness through these beliefs. Rather than simply instructing a set of facts about the nature of learning, the participants focused on enabling students to rethink their existing ideas and come to new conclusions. By reflecting on and critically examining their beliefs about the nature of knowledge and learning, students became more aware of their learning processes and were regarded as better equipped to recognise and correct any misconceptions or naive assumptions. According to the participants, this process of self-evaluation and reflection allowed the students to develop a more accurate and nuanced understanding of how they learn, ultimately leading to improvements in their overall approach to SRL.

This study found epistemological beliefs to have a pronounced influence on the participants' understanding of SRL implementation. The data detailed the participants' emphasis on students acquiring these beliefs through self-evaluation and reasoning rather than simply receiving a transmission of facts. This approach reflects a constructivist perspective on learning that prioritises student thinking, reasoning, and readiness. The study also reveals that, in addition to having a conceptual understanding of SRL, the participants viewed sophisticated epistemological beliefs as a necessary precondition for advancing students to SRL instruction. Along with conceptual knowledge and belief systems, students also needed to perceive SRL as personally relevant, which will be discussed in the next section.

Personal Relevance

The participants highlighted that effective SRL implementation addressed the relevance and importance of SRL. Scholars have advocated the value of SRL by exploring its role in various arenas and confirmed the added advantages of those with high SRL skills (Panadero, 2017). This was mirrored in the participants' examples of SRL to students

concerning scenarios both in and outside the classroom. However, the data also evidenced the participants' emphasis on students requiring a sense of personal relevance to SRL, ensuring that it is a meaningful endeavour. This perspective distinguishes between the importance of SRL and the personal relevance of SRL. Notably, a sense of importance and personal relevance were both considered necessary. However, the participants' exemplified a focus on providing students with the opportunity to assign personal relevance to SRL for developing a genuine interest in the topic.

Rather than merely presenting ideas about the importance of SRL, the participants allowed students to determine its purpose based on their individual experiences and interests: "They (students) needed to see the benefits of SRL for their life" (POB). Although the construct of relevance in the literature encompasses varying theoretical perspectives and orientations, they tend to be underpinned by a student-centred emphasis whereby relevance needs to be a meaningful personal connection (Alexander, 2018; Clegg & Kolodner, 2014; Schmidt et al., 2019; Vansteenkiste et al., 2018). The participants understood that relevance influenced student motivation and engagement due to its connection with students' values and achieving their personal goals.

The motivational component of SRL theory has significance to the participants' emphasis on personal relevance (Zimmerman, 2011). SRL models emphasise the importance of what drives learners' willingness to activate cognitive and behavioural actions to regulate learning (Panadero, 2017). This understanding was exemplified in the participants' recognition of students' interests and goals in their attempts to make SRL relevant: "You really needed to appreciate their differences and that area of their life they wanted to apply SRL, whether that be a sporting achievement or better friendships" (POF). Personal relevance helps students determine whether learning content is worth knowing based on its role in their life (Alexander, 2018).

The emphasis on personal relevance reiterates the participants' constructivist understanding of SRL implementation. Assigning purpose to material aligns with a historical principle of constructivism that underlines the inherent human motive to construct meaning from experiences (Paris & Byrnes, 1989; Sigel, 1969). Hence, the participants' teaching approach was based on their perspectives of what would satisfy their students' needs to make sense of the world. The participants, therefore, recognised the importance of the relationship between the development of understanding and a motivation to understand: "If a student does not understand the reasons behind our classroom activities, it is not going to sink in, and they are not going to put in as much effort." (POB). In SRL theory, student learning and motivation have an interdependent relationship where one cannot function without the other (Zimmerman, 1990). The participants understood that despite their instructional efforts, their teaching needed to be recognised and utilised by the students to be effective.

The findings demonstrated that personal relevance was linked to ideas of student readiness due to its driving force on student motivation. The participants' descriptions of making SRL relevant to students reaffirmed a constructivist understanding of effective SRL implementation by targeting students' observable desire to make meaning of the world. This was achieved by creating a context in which SRL could become meaningful and purposeful for students relevant to their interests and goals.

Overview of the Further Analysis of Category Two

The discussion and further analysis of Category Two explored the principles that guided the participants' understanding of effective SRL implementation. It revealed a constructivist-orientated understanding of SRL implementation that focused on student readiness. Readiness was vital to the participants' understanding of effectively developing students' SRL skills and strategies. This study highlights that student readiness for SRL

represented: conceptual knowledge, sophisticated epistemological beliefs, and personal relevance. These characteristics were essential preconditions before advancing students to SRL-specific instruction.

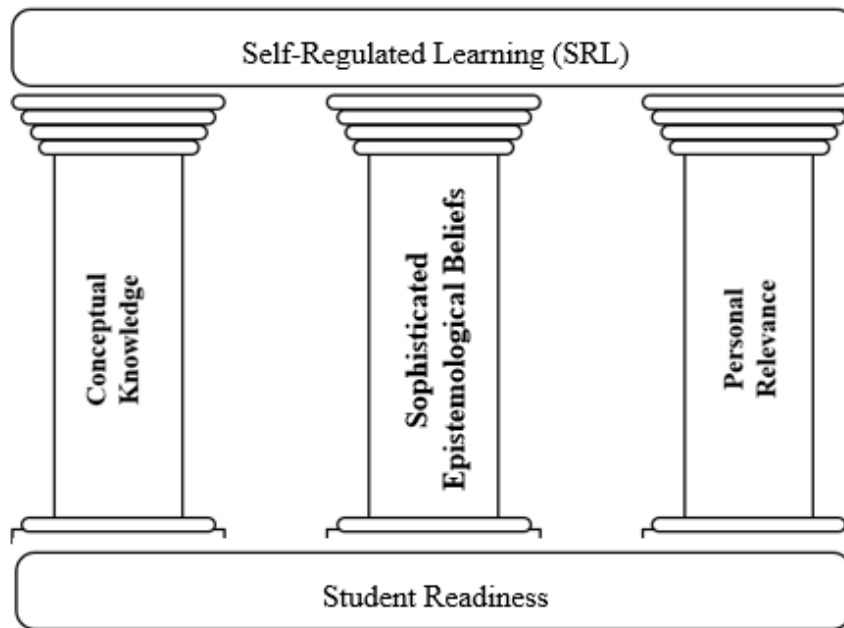
Firstly, student readiness was determined by correct conceptualisations of SRL, centred on student thinking and sense-making. Conceptual knowledge of SRL was foundational to students' effective and sustainable use of SRL. Therefore, the participants understood effective SRL implementation in Grades 5 and 6 as activating students' prior knowledge and bridging the gap between what students already understood about self-regulation and SRL in academic contexts.

Secondly, student readiness was defined by sophisticated epistemological beliefs, which include the understanding that intelligence is malleable, and that learning can be developed. These beliefs were essential to the successful and long-term use of SRL. Thus, effective SRL implementation in this study focused on allowing students to identify and challenge their views on the nature of learning and knowledge. The participants utilised Zimmerman's (2000) model on the phases of SRL to encourage students to reflect on and evaluate the learning process.

Finally, students' perceptions of the personal relevance of SRL were an important indicator of readiness. Students needed to establish the role of SRL in achieving their personal goals both in and outside the classroom. As a result, SRL implementation was designed to provide students with the opportunity to connect with the topic in a meaningful and relevant way to their individual experiences and interests, thereby fostering a genuine interest in the subject matter. SRL implementation that identified and built student readiness established supportive pillars for SRL strategies and skills. The findings implicit in Category Two can be represented diagrammatically as follows in Figure 6.

Figure 6

Overview of the Further Analysis of Category Two



Conclusion and Summary of Findings Relevant to Category Two

This chapter has presented and analysed the second category and associated subcategories that emerged from the data. This category explored the participants' perspectives regarding effective SRL implementation in Grades 5 and 6 with three distinct subcategories emerging from the data: developing students' conceptual understanding of SRL, addressing students' beliefs about the nature of learning, and promoting the relevance and importance of SRL. The chapter's discussion centred on these emerging findings and has provided valuable insight into the teachers' perspectives on SRL implementation. The chapter attempted to link the discussion and analysis of these findings in relation to existing literature to provide a deeper understanding of the participants' perspectives.

A further analysis of the findings demonstrated that the teachers in this study viewed effective SRL implementation as identifying and building student readiness for

SRL. The teachers defined student readiness as students' capacity to conceptualise SRL principles based on their prior knowledge, acquisition of sophisticated epistemological beliefs through self-evaluation and reasoning, and identification of the personal relevance of SRL based on their interests and goals. The teachers recognised that constructing conceptual knowledge, sophisticated epistemological beliefs and personal relevance are critical for how often and effectively students use SRL. This approach accentuates that creating a purposeful and meaningful context for SRL constituted effective implementation for the participants.

The focus of studies on guiding students through SRL has centred on the instruction of strategic knowledge (Dignath & Buttner, 2018). This study offers a unique perspective by emphasising the importance of identifying and building student readiness for SRL before advancing students to strategy instruction. How teachers can assess the developmentally appropriate expectations for student SRL is lesser known and accounts for its complexity in the classroom (Peeters et al., 2016; Vosniadou et al., 2020). There is little understanding of the specific cues or abilities teachers consider when assessing student readiness for SRL (Callan & Shim, 2019; Dignath & Sprenger, 2020). This study illuminated a distinctive approach to assessing student readiness for SRL based on a constructivist approach that identified three critical indicators: conceptual knowledge, sophisticated epistemological beliefs, and personal relevance. These three indicators identified in the study served as critical pillars for effectively implementing SRL phases and strategies. Chapter Six presents the data and an analysis of Category Three, which report on the teachers' perspectives on how to effectively implement SRL phases in the specific context of reading comprehension.

Chapter 6.

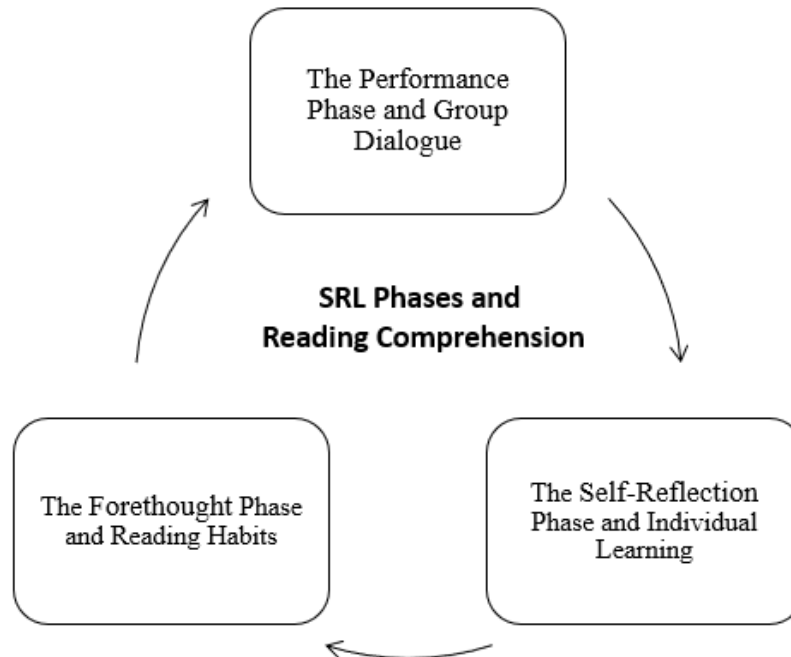
Findings Related to Category Three: SRL Phases and Reading Comprehension

This chapter reports on the third category of findings related to how the participants understood SRL implementation for advancing students' reading comprehension in Grades 5 and 6. In this study, the participants used Zimmerman's (2000) model to implement SRL in reading contexts. Zimmerman's (2000) model includes the forethought, performance, and self-reflection phases of SRL. In the context of reading, studies have examined the role of individual subprocesses of SRL on reading comprehension, such as strategy use, self-reflection, or goal setting (Schunemann et al., 2017). While such components are essential features of specific phases of SRL, further research is required to examine teachers implementing all phases instead of individual components (Massey, 2009; Ng & Follmer, 2017). The findings reported in the following sections attempt to address this gap and specifically explore the participants' understanding of their experiences with SRL implementation to advance students reading comprehension in Grades 5 and 6.

The chapter starts by presenting the emerging findings generated from the interviews with primary school teachers participating in this study. The research employed the principles of Classic Grounded Theory (Glaser & Strauss, 1967) to identify the categories and subcategories of findings. Three subcategories within Category Three were identified that represent the participants' perspectives on the effective implementation of each phase of Zimmerman's (2000) SRL model for improving students' reading comprehension. They include the forethought phase and reading habits, the performance phase and group dialogue, the self-reflection phase and individual learning. These findings are displayed in Figure 7.

Figure 7

Category Three: Category and Subcategories



The chapter begins by presenting the emerging findings from participants' perspectives, using quotes as support. These findings are then discussed and analysed in relation to the existing literature in the subsequent section. The chapter culminates with a visual representation and overview of the findings.

Category Three: SRL Phases and Reading Comprehension

The Forethought Phase and Reading Habits

This subcategory presents the participants' perspectives on how Zimmerman's (2000) first and forethought phase was applied to students' development in reading comprehension. The participants regarded this phase as an opportunity for students to establish learning goals. They emphasised that each subject domain requires the consideration of varying influences when developing goals. A critical component for reading comprehension included the development of goals based on reading habits instead

of reading abilities. A focus on reading habits was associated with valuable perceptions about learning and was more compatible with SRL. In this context, reading habits were understood as behaviours and choices regarding one's reading practices that are repeatedly carried out (Bano et al., 2018). In comparison, reading abilities were referred to as the exhibition of specific reading skills that emphasised external markers of achievement such as vocabulary, word decoding, or fluency (Christensen et al., 2022).

It was clear those involved in the study emphasised that a focus on reading habits related to effective self-regulation of reading processes. Reading habits were essential for every student to consider, regardless of their reading performance. While some students already displayed positive reading habits, students needed to recognise the relationship between these habits and their learning. This understanding was reflected in comments such as: "It was more than just encouraging them to practice better habits. It was getting them to make that connection between their behaviour and their learning" (POC). POA provides examples of questions that were posed to students for considering reading habits:

Do you tend not to finish books? Are you always choosing the same books? Is reading a part of your nightly routine? Do you look up words you do not understand? Do you think about the mode of text you are reading? Do you think about the author's intentions?" (POA).

An emphasis on the role of reading habits shaped students' understanding of how their actions may have impacted their learning and reading development. The participants stressed that such an understanding was essential for effective SRL processes. POE captured the outcome of directing students' learning goals toward reading habits: "When they realise that their choices and behaviour influence their reading, it stimulates a sense of ownership. They can better understand the learning process." Hence, reading habits were expected to translate into a deeper understanding of learning.

Students' understanding of learning was perceived as changing depending on the subject area. Accordingly, how students perceived reading-related learning was essential to address during the forethought phase of SRL. POA explained an example of students' perceptions that the participants wanted to change:

Students have asked, 'if I reread sentences does that mean I was not smart enough to get it the first time?' We had to rewire their thinking to rereading is what good learners do. This of course changes with every subject. They view how to be good at each subject quite differently.

Directing students' goals toward their reading habits enlarged their understanding of learning and increased motivation. However, creating goals based on reading abilities was considered inconsistent with SRL as it focused students on outcomes rather than the process of learning. POD also highlighted the learning outcomes that emerged from students focusing on reading habits: "They started saying I can do this, I understand what choices I need to make, and I understand what it takes to be a good reader." Allowing students to focus on their reading habits fueled the importance of actively participating in the learning process. Hence, the participants intended to strengthen the idea that repeated practice and active participation were key components of good reading.

The participants aimed to improve students' reading comprehension by emphasising the importance of reading habits for achieving learning goals. The participants observed that setting goals based on reading habits enhanced students' awareness of the causal relationship between behaviour and learning. Once reading goals were established, the participants engaged students in group dialogue during the performance phase of SRL. This enabled students to develop critical thinking skills during reading and is discussed in the following subcategory.

The Performance Phase and Group Dialogue

During the performance phase of SRL, the participants repeatedly conveyed the importance of group dialogue for developing students' critical thinking. Students were randomly assigned to collaborative groups of five to six that the teachers facilitated. *Group dialogue* was defined as a verbal discussion between groups of students and a teacher. Students and teachers reflected on reading comprehension tasks together by applying critical thinking skills. The participants referred to critical thinking as the ability to analyse or evaluate reading material. Group dialogue became pertinent in deepening students' reading comprehension and SRL.

Dialogue marked students' critical thinking, which contributed to deepening and accelerating learning. POD describes the core importance of dialogue that the participants advocated: "It (group dialogue) showed them what it means to be a good reader and what a good reader thinks about." Specifically, effective dialogue engaged students in using multiple critical thinking skills, including asking questions, reasoning individual points of view, evaluating parts of the text, offering peers feedback, collaborative problem solving, and developing personal learning insights. These skills changed students' perceptions of reading comprehension. For example, students were reported to express concern about potentially giving wrong answers during reading comprehension tasks. However, as students progressed through group activities, they began to relate what was emerging in their dialogue to the experience that reading comprehension is a dynamic and complex process. The following POF account provides insight into how students' perceptions of reading comprehension changed due to group dialogue: "Students began to grasp that it is not about giving the right answer but doing the right type of thinking. Group discussions were a turning point and a prime example of how to approach reading material and be

analytical.” Hence, the interactive aspect of group dialogue contributed directly to students’ use of critical thinking and perceptions of reading.

Group dialogue activities also broadened the participants’ awareness of how to support students’ SRL skills in reading comprehension. The participants decided to eschew a traditional evaluative role in students’ reading comprehension. The following statement captures the participants’ shift in awareness emerging from group dialogue activities:

We realised how much our lessons used to be teacher-dominated, with students primarily seeking confirmation for showing a correct understanding of what they were reading. This did not promote critical thinking or self-regulation at all. If anything, it blocked it. Our job was to ask open-ended questions, value everyone’s responses, and let the students guide the discussion. (POF)

In their role as teachers, the participants modified their emphasis on the provision of correct answers to the demonstration of critical thinking. The participants considered the ineffectiveness of teachers emphasising a transmission of understandings that require students to respond to known-answer questions. They described such teaching as limiting students’ critical thinking and not conducive to SRL development. Furthermore, focusing on the quality of conversation promoted students’ awareness of the processes for understanding text.

The participants used group dialogue to guide students in developing and applying critical thinking skills during SRL. The participants observed that group dialogue contributed to reading comprehension in a way that also extended students’ understanding of reading comprehension. Ultimately, group dialogue focused on developing critical thinking to help students function as self-regulated readers. Following group activities, it was important for the participants to allow students time to self-reflect and internalise these group learning experiences. This is discussed in the next section.

The Self-Reflection Phase and Individual Learning

The self-reflection phase of SRL represented an opportunity for the participants to help students manage their individual progress in reading comprehension. Self-reflection was facilitated with guiding questions that directed students to review the critical thinking processes they participated in during group activities. The participants emphasised the importance of enabling students to appraise their formerly acquired reading habits, critical thinking skills and knowledge to better self-regulate their future reading tasks.

Group learning activities involved multiple critical thinking skills for reading comprehension. Therefore, the participants aimed for students to capture the effective habits and skills they observed in themselves and their peers during those experiences. The following comment reflects this understanding: “The group activities are so rich, and we did not want them to be passive consumers of these experiences and lack any real awareness of what skills are going on in that process” (POB). The students were expected to review their learning and draw conclusions independently. When students practised this process, they were considered to show more self-awareness, direction, and focus during future activities. As a result, self-reflection increased students’ abilities to develop a sense of responsibility for their learning. This was captured in reflections such as: “It put it back on them and made them realise what worked and what did not work for them or what they wanted to try during the next group activity” (POB). Addressing students’ individual learning needs during this phase was necessary to support SRL during reading comprehension.

The participants regarded SRL as an internal process that needed to be self-directed: “They need the chance also to make sense of their group learning experiences in terms of the goals they had set” (POC). Therefore, self-reflection was an essential activity for

students to review their work during group activities and reflect on their thinking skills: “It taught them how to rethink and evaluate their thinking” (POF). The participants supported this process through guided questions that encouraged them to evaluate their skills and knowledge. POE expressed the purpose of self-reflection shared by the participants: “Although group activities stimulated many skills, they needed to sit back and make sense of it for themselves. They must define what was learned and its relevance to them individually.” The participants elaborated upon the students’ self-reflections, constantly reinforcing the skills they developed: “We would walk around during this time and have mini-conferences with the students about their reflections to support the process” (POA). In this way, self-reflection allowed students to construct personal meaning from their group learning experiences. The participants formally reviewed students’ self-reflections to ensure they successfully engaged in SRL.

According to the participants, the self-reflection phase was an individual activity for students to consolidate the learning gained during group activities. It was a chance for new knowledge to be clarified, reinforced, and internalised. Furthermore, the self-reflection phase ensured that students could clarify critical processes, identify knowledge gains or gaps, and personalise their learning by making it relevant to their individual goals.

Overview of The Emerging Findings of Category Three

Three specific subcategories emerged that contributed to the participants’ understanding of implementing SRL phases as per Zimmerman’s (2000) model for developing students’ reading comprehension: the forethought phase and reading habits, the performance phase and group dialogue, and the self-reflection phase and individual learning. In the forethought phase, participants encouraged students to set learning goals focusing on developing reading habits rather than specific skills or abilities. Students

gained a deeper understanding of the learning process by emphasising the role of repeated choices and practices in learning. During the performance phase, the participants used group dialogue to guide students in developing and applying critical thinking skills for reading comprehension. Effective dialogue encouraged the use of multiple critical thinking skills, resulting in a more comprehensive understanding of the reading comprehension process. To facilitate the quality of conversation among students, the participants avoided taking a traditional evaluative role in students' reading comprehension. In the self-reflection phase, students were required to appraise the skills and knowledge acquired during group activities, which allowed for better self-regulation of future reading tasks. This phase provided an opportunity for new knowledge to be reinforced and internalised.

A Discussion and Further Analysis of Category Three

The following section offers a discussion and further analysis of the findings from Category Three. As previously reported, three distinct subcategories emerged from the data. Importantly, this section positions these findings within a discussion that draws upon associated scholarly literature. As a result, key components pertaining to SRL implementation and reading comprehension were identified, including epistemological beliefs about reading; social interactions and critical thinking; and knowledge consolidation and individual agency. These areas are discussed in this section and aim to provide deeper insights into the participants' perspectives.

Epistemological Beliefs about Reading

In this study, students were asked to set their learning goals around reading habits instead of reading abilities. Goal setting is a critical aspect of the *forethought phase* of Zimmerman's (2000) model of SRL as it offers students a platform to develop cognitive processes such as planning, self-monitoring, metacognition, and strategy selection in the

proceeding phases (Panadero, 2017). The participants highlighted the significance of establishing reading habits as a learning goal, underscoring its necessity for all students, irrespective of their existing reading skills or habits. This universal targeting of reading habits in the classroom was seen as critical for student success in SRL. According to the participants, this approach was more than just encouraging better habits: “It was getting them to make that connection between their choices and their learning” (POC). By emphasising students' views of learning, the participants alluded to epistemological beliefs (Erixon & Hannson, 2022; Schommer & Walker, 1995).

A critical insight from the participants was their views that students held different beliefs about the nature knowledge and learning in each subject domain: “This, of course, changed with every subject. They viewed how to be good at each subject quite differently” (POA). Early conceptualisations of epistemic beliefs throughout the literature were impartial to subject domains, and scholars primarily conducted assessments at a domain-general level (Schommer, 1990). However, there is growing consensus that epistemic beliefs may vary across subject domains and specific topics within subject domains (Hofer, 2000; Letina, 2021; Muis et al., 2006). In this study, the participants drew attention to the variability of epistemological beliefs they observed among their students based on the subject matter. They also highlighted that reading habits were effective for promoting learning beliefs specific to reading.

Reading habits were regarded as ideal conditions for students to consider the nature of learning to read. The core ideas about learning the participants wanted to convey to students were visible in their frequent comments about repeated practice: “It (learning) requires their commitment and repeated practice” (POD) and “When they realise that their choices and behaviour influence their reading...” (POE). Hence, reading habits were a

meaningful way to focus students on the epistemological beliefs concerning active participation and repeated practice during reading comprehension tasks. Studies have examined the use of SRL processes to cultivate positive reading habits (Ku, Fox, & Chen, 2016; Lawler et al., 2018; Lee & Yoo, 2017). In comparison, the participants in this study took a different approach by exploring how reading habits could be used to influence students' epistemological beliefs, which support SRL.

Another shared learning outcome for the use of reading habits reported by the participants is reflected in the following comment: “We noticed them becoming more driven to practice reading. They began to understand what being a good reader is all about. They started saying, I am a good reader now because I practice all the time” (POD). The reference to students’ descriptions of themselves as readers refers to their reading ability self-perceptions (Aukerman & Schuldt, 2015), also known as reading self-efficacy (Nystrand, 2006; Unrau et al., 2018). Zimmerman (2002) highlights that self-efficacy is important during the forethought phase and strongly predicts students’ performance (Zimmerman, 2002; Panadero, 2017). The participants reported that students targeting positive reading habits as opposed to external markers of achievement changed their perceptions of what it means to be a good reader and enhanced their reading ability self-perceptions.

The differing epistemic beliefs students adopt in classrooms can extensively shape students’ beliefs about literacy (Johnston et al., 2001) and students’ reading ability self-perceptions (Aukerman & Schuldt, 2015). However, the developmental pathways by which such beliefs develop remain unclear. The kind of instruction students can receive to influence their epistemic beliefs and reading self-efficacy requires further investigation (Peura et al., 2019; Smith & Jang, 2022; Unrau et al., 2018). The participants relied on

reading habits to influence how students envisioned the requirements for being a good reader. Whereby the demonstration of positive reading habits characterised a successful reader. The participants believed that a sense of success derived from reading habits translated to a personal level for the students as being competent in reading: “I can do this, I understand what choices I need to make, and I understand what it takes to be a good reader” (POD). Furthermore, reading habits fostered a sense of self-efficacy.

How teachers can enable students to create meaningful goals during Zimmerman’s (2000) forethought phase of SRL for reading comprehension is lacking (Schunemann et al., 2017). In this study, the participants believed that it was important for students to understand the nature of learning to read. Therefore, learning goals were targeted at the universal classroom level to encourage all students to consider and focus on their reading habits, regardless of their current skills or practices. The participants aimed to establish specific beliefs about the nature of learning to read and what it means to be a good reader. The findings of this study indicate that the universal targeting of epistemological beliefs about reading was a fundamental aspect of the participants’ implementation of SRL in the reading context. By emphasising the importance of reading habits, the participants sought to promote a deeper understanding of the learning process and encourage students to take ownership of their learning. Following this phase, the participants implemented the *performance phase* of Zimmerman’s (2000) model of SRL to develop student reading comprehension, discussed in the next section.

Social Interactions and Critical Thinking

The participants supported students’ SRL during the *performance phase* with group activities that presented opportunities to display critical thinking. Critical thinking and SRL are distinct fields but interact to contribute to student learning (Leung & Kember, 2003;

Paris & Newman, 1990; Schunk & Zimmerman, 1994; West et al., 2008; Yanchar et al., 2008; Zimmerman, 2002). *Critical thinking* can be defined as a cognitive skill that requires deep processing strategies to analyse and evaluate information (Ignatavicius, 2001; Leung & Kember, 2003). In this way, critical thinking is a cognitive strategy used in SRL (Zimmerman, 2002, 2008). In this study, critical thinking was a key SRL strategy focused on during the performance phase for reading comprehension. Reading comprehension tasks were completed in groups, and critical thinking was exercised when students asked questions, shared ideas, and argued points of view.

The fundamental basis for students' development of critical thinking was the opportunity to examine a text in light of whole-group discussions and frame their own perspectives. Group dialogue was essential during this phase and was facilitated by the participants with open-ended questions, valuing divergent student responses, and encouraging the exploration of ideas. While dialogue comprises social interactions that stimulate learning (Alvi & Gillies, 2015), not all forms of social interactions contribute to cognitive progress (Tudge, 1989; Xiao et al., 2022). The development of high-level thinking processes during social interactions is attributed to socio-cognitive conflicts and their solution (Gillies et al., 2012; Nastasi et al., 1990; Psaltis et al., 2009). Progress depends on various factors, such as the role of the mediator (Doise & Mugny, 1991; Gillies et al., 2012) and the type of task and interaction (Butler & Cartier, 2004, 2017). Hence, the participants played an important role in activating students' critical thinking by encouraging opposing ideas during social interactions and text analysis.

Critical thinking was not the participants' only intended outcome during group dialogue. Their focus was also accentuated by their repeated intentions to shape students' perceptions of reading, displayed in comments such as "It (group dialogue) showed them

what it means to be a good reader and what a good reader thinks about” (POD). Perceptions the participants wanted to eliminate included external markers of achievement and the idea that reading skills were a matter of intelligence rather than practice. The participants consistently focused their descriptions on promoting the perception that students are active learning agents who generate ideas and questions to make meaning of the text. This view is consistent with research showing that competent readers are more likely to believe that knowledge is complex, potentially biased, and needs to be critically analysed (Alexander & Winne, 2012; Aukman & Schuldt, 2015). However, the developmental pathways by which students’ beliefs about how the act of reading develops warrant further research (Aukman & Schuldt, 2015).

In this study, group dialogue was essential for shaping students’ perceptions of reading and knowledge. Group dialogue provided a platform to shift students thinking of reading comprehension tasks from requiring right or wrong answers to using critical thinking skills. Hence, the participants aimed for knowledge to build through student interactions that offer multiple perspectives during text discussion. This contrasts with approaches that emphasise the recitation of a single perspective, usually that of the teacher (Applebee et al., 2003). These findings illuminate that the participants perceived a strong relationship between social interactions, epistemological beliefs and SRL. While some studies have investigated how teachers might facilitate change in adult epistemologies (Palmer & Marra, 2008), few have considered primary school contexts to explore how instructional practices influence students’ beliefs about reading.

The participants aimed to stimulate SRL during the performance phase by encouraging effective group dialogue that consisted of opposing ideas and multiple perspectives of text. By nature, classrooms are unavoidably dialogic, with different voices

involved (Nystrand, 1997). However, teachers play an essential role in how students' diverse voices are central to learning (Aukman & Schuldt, 2015). In this study, group dialogue formed a lens for students to view reading comprehension as text analysis rather than requiring *correct* or known answers. Hence, in the classroom, small group dialogues guided by teachers were found to promote critical thinking skills, an essential strategy in SRL. Students who participated in these group discussions were therefore demonstrating an analytical approach to reading comprehension. This finding highlights the participants' understanding of student engagement in social interactions, such as small group dialogue, for promoting SRL. However, the participants also intended for this socialised activity to lead students to SRL at an individual level. This was practised during the self-reflection phase and is discussed in the next section.

Knowledge Consolidation and Individual Agency

The participants' perspectives on the self-reflection phase highlight their intentions to guide students' appraisal of the essential skills and knowledge acquired during group activities. Their core goal was for students to capture all previous learning in a single activity, enabling them to identify and address future learning objectives. This is consistent with the purpose and role of Zimmerman's (2000) self-reflection phase to engage learners in task appraisal (Panadero, 2017). The participants supported students' self-reflection through questions, encouraging students to form evaluative judgements and plan future actions to regulate thinking. In this way, the participants facilitated students' metacognitive experiences by guiding the identification and interpretation of one's thinking processes (Butler & Cartier, 2017; Huang & Cherng, 2021; Schraw et al., 2006).

During this phase, the participants stressed the importance of students making sense of their learning: "They needed to sit back and make sense of it for themselves. They must

define what they have learned and what was relevant to them individually” (POE). Such an emphasis indicates that the participants predominantly considered the self-reflection phase as an avenue for knowledge consolidation of the skills developed during group dialogue. Knowledge consolidation reinforces essential information and provides clarification and exploration (Stokes & Craig, 2022). Knowledge consolidation is enhanced during self-reflective practices and can create deep learning in the context of student’s individual learning needs (Brookfield, 2017). The participants’ references to knowledge consolidation were vital for maximising learning outcomes, as expressed in comments such as: “We did not want them to be passive consumers of these experiences and lack any real awareness of what skills are going on in that process” (POB). In such descriptions, the participants highlight the importance of students identifying and clarifying important insights gained during the previous phase.

The participants notably linked knowledge consolidation to individualised levels of learning that required more internal and self-generated processes: “They must define what was learned and its relevance to them individually” (POE). This is consistent with notions that, for learning to be self-regulated, students must make intentional choices and autonomously exercise their course of action accordingly (Winne et al., 2010). *Agency* is a common term that describes this intentionality and the ability to act on choices (Winne et al., 2010). Hence, the role of individual agency in student learning underpinned the participants’ understanding of the self-reflection phase. This focus resonates with the emphasis on the self in SRL for activating and managing individual practices (Boekarts & Cascallar, 2006; Schunk & Zimmerman, 2012).

The participants referred to students’ individual agency in comments such as: “It put it back on them and made them realise what worked and what did not work for them or

what they wanted to try during the next group activity” (POB). Furthermore, when students planned their future learning attempts based on self-reflection, they were regarded as exercising agency. The participants also emphasised the importance of redirecting students to their goals and skill development during the performance phase: “They need the chance also to make sense of their group learning experiences in terms of the goals they had set” (POC). The participants recognised the importance of students’ implementing such critical insights into future attempts and receiving opportunities to personalise learning progress, which is central to SRL (Alvi & Gillies, 2015).

This study revealed that Zimmerman’s (2000) self-reflection phase of SRL was perceived as an opportunity for knowledge consolidation and enabling individual agency over SRL practices. While SRL strategies such as critical thinking skills were developed through dynamic social interactions, the teachers in this study recognised the importance of students receiving opportunities to internalise their learning and exercise agency. This study indicates that the participants regarded student development of agency as being firmly prescribed during the self-reflection phase of SRL. These findings accentuate that the participants considered self-reflection and group activities to complement each other to give full play to students’ self-regulated learning abilities.

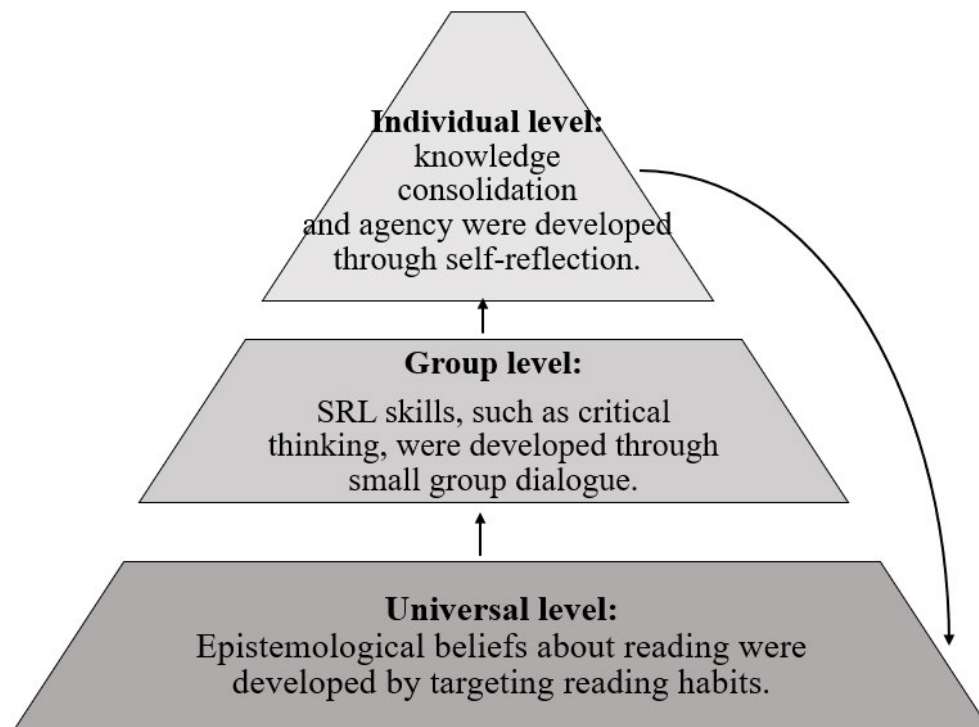
Overview of a Further Analysis of Category Three

In the aforementioned section, the participants' understanding of implementing SRL within the context of reading comprehension was examined, revealing crucial insights. While Zimmerman's (2000) SRL phases are traditionally conceptualised as a cyclical process, the participants' unique perspectives on classroom implementation can be represented in a pyramid model. This model delineates three distinct tiers of interventions, each pivotal in fostering SRL skills within the classroom setting. These interventions

involved promoting universal epistemological beliefs about reading in the classroom, utilising group activities to promote SRL skills such as critical thinking, and offering individualised support to facilitate knowledge consolidation and individual agency. By incorporating these interventions, the participants aimed to promote student SRL in reading comprehension contexts. Figure 8 illustrates the participants' understanding of implementing SRL phases to improve student reading comprehension.

Figure 8

Overview of the Further Analysis of Category Three



The adoption of a pyramid model with recursive arrows encapsulates the nuanced approach employed by the participants in implementing SRL within the realm of reading

comprehension. Furthermore, the participants' tiered approach to individual SRL behavior illustrates a pyramid dynamic in which each level builds on the previous. The foundational tier of the pyramid signifies the establishment of universal epistemological beliefs about reading, showcasing the participants' collective effort to cultivate a shared understanding within the learning environment. As the pyramid ascends, the middle tier highlights the engagement in interactive social processes, particularly through small group discussions. This tier reflects the participants' dedication to fostering SRL development through collaborative and dialogical learning experiences. Small group interactions encouraged critical thinking and served as key processes for achieving reading comprehension. The apex of the pyramid encapsulates the participants' commitment to individualised support, emphasising personalised strategies for knowledge consolidation and the empowerment of individual agency in the learning process.

The recursive arrows woven into the model emphasise the iterative nature of SRL, underscoring the participants' recognition that the learning process involves continuous reflection, goal-setting, and refinement. Furthermore, following self-reflection at the individual level of the pyramid, the iterative process unfolds as students are prompted once again to set goals based on their reading habits. Figure 8, presenting the pyramid model, underscores the universal-to-group-to-individual progression of SRL. The arrows within the model accentuate the recursive nature of this process. This pyramid model stands as a robust visual representation, providing a comprehensive and structured framework that emphasises the participants' concerted focus on developing SRL from a universal to an individual level.

Conclusion

This chapter has explored the participants' perspectives regarding effective SRL implementation to advance students reading comprehension in Grades 5 and 6. Specifically, the participants drew on Zimmerman's (2000) model of SRL to advance students' reading comprehension. Three subcategories within Category Three emerged associated with key features the participants perceived as critical for implementing each phase of Zimmerman's (2000) model. They included: the forethought phase and reading habits; the performance phase and group dialogue; the self-reflection phase and individual learning. The chapter's discussion centred on these emerging findings and has provided valuable insight into the teachers' perspectives on implementing SRL in the classroom in the context of reading comprehension.

The chapter attempted to link the discussion and analysis of these findings in relation to existing literature. A critical insight emerging from the study was the relationship the participants perceived between students' epistemological beliefs about reading and SRL. The teachers recognised that the forethought phase was essential to form learning goals based on reading habits rather than reading abilities. The repeated practice of positive reading habits was intended to characterise a successful reader to students and correspondingly influence their epistemological beliefs about reading and sense of reading self-efficacy. Students were given opportunities to practice positive reading habits, such as critical thinking, in the next phase.

Further, the teachers reported that the dialogue associated with small group activities during the performance phase significantly contributed to the participants' understanding of students' development of critical thinking skills and epistemological beliefs about reading. Based on the perspectives of the participating teachers, it became

evident that critical thinking skills were developed when students examined the text in group discussions that presented opposing ideas and allowed students to frame their perspectives. The practice of critical thinking skills during social interactions encouraged epistemological beliefs about reading, such as the idea that comprehension develops through active participation, asking questions and exploring different perspectives. As a result, students' epistemological beliefs about reading constituted a key focus of the participants' implementation process. This is an important insight gained from the teachers due to this study.

As the participants considered Zimmerman's third and self-reflection phase, they increasingly conceptualised SRL as a dual social and individual phenomenon. They shared the view that while a socially interactive process of group dialogue was essential for developing SRL during the performance phase, this led to SRL at an individual level during the self-reflection phase. Thus, a new insight has been generated through this research that self-reflection was an avenue for students to consolidate essential knowledge and SRL skills after group learning activities. The study found that the participants used a tiered approach to SRL implementation where each level builds on the previous, creating a pyramid dynamic. The first level involved establishing reading-specific epistemological beliefs in all students. The second level emphasised interactive social processes, such as small group discussions, to support SRL development, while the third level focused on individualised learning to consolidate knowledge and develop individual agency. Overall, the study highlights the participants' emphasis on epistemological beliefs about reading and social interactions in developing SRL skills at the individual level.

Chapter 7.

Implications and Recommendations

This research project explored classroom teachers' perspectives on effective SRL implementation and reading comprehension, focusing on Grade 5 and 6 students in one context. The chapter overviews the research purpose, design, and context and discusses the theoretical propositions that have emerged from the study findings. Based on this synthesis, the resulting substantive model is presented, which reflects classroom teachers' authentic experiences and perspectives on effective SRL implementation and reading comprehension. This conceptual model has the potential to inform educational policy and guide SRL application in the classroom while also contributing to the broader research on SRL implementation and reading comprehension, advancing educational theory and practice. Lastly, the study's limitations are discussed, and suggestions for further research are proposed to identify the importance of continuing this early work into a broader landscape.

Purpose and Context of the Research

The present study is grounded in the established research on SRL found in the literature, which highlights SRL as a critical process associated with learning and is widely acknowledged for its beneficial influence on academic achievements (Panadero, 2017). Although SRL has been extensively studied with a focus on developing and validating models to explain its processes, there is a paucity of research on its implementation in classroom settings (Cleary et al., 2022; De Smul et al., 2020; Greene, 2021). Additionally, the study was motivated by the persistently low reading comprehension abilities observed in Australian students in national and international assessments, as highlighted in Chapter One (Ainley et al., 2022; Hillman et al., 2023). Due to the multifaceted nature of reading comprehension, which entails several cognitive processes and strategies, it is a challenging

skill to teach and evaluate (Golan et al., 2018). SRL Theory, which emphasises the development of critical processes related to reading comprehension, is particularly relevant in this context. Therefore, this study aimed to explore primary school teachers' perspectives on implementing SRL in the context of reading comprehension. Specifically, the study involved six in-service Grade 5 and 6 classroom teachers from a single Victorian Catholic school with an integrated SRL approach to teaching and learning. The research design to gather data and explore the research phenomena is detailed in the next section.

Approach to Research Design

The methodology used to collect and analyse the data in this study was carefully selected to ensure a rigorous and comprehensive analysis of the participants' experiences with SRL implementation and reading comprehension. The methodology for processing the data drew upon the principles of Classic Grounded Theory (CGT) initially outlined by Glaser and Strauss (1967). This methodology was merged with the epistemological considerations of constructivism (Crotty, 1998). By taking a constructivist perspective, the researcher could better understand how the participants made sense of their experiences and develop a deeper understanding of their perspectives on SRL implementation and reading comprehension.

To gather data, the researcher used unstructured interviews with the participants. This approach enabled the participants to recount their experiences with SRL implementation in their professional roles as teachers with limited influence from the researcher's agendas and conceptual frameworks. The researcher analysed and compared the emerging findings generated by the participants and the broader body of existing literature in the field (Mediani, 2017). The theoretical perspectives of interpretivism (Orlikowski & Baroudi, 1991) and symbolic interactionism (Blumer, 1969) were employed

to draw conclusions from the participants' accounts of their lived experiences as educators with SRL. This rigorous approach enabled the researcher to engage with related research where shared symbolic language provided the basis for critical and analytical processes. The methodology employed in this study provided a robust and comprehensive approach to analysing the participants' experiences with SRL implementation and reading comprehension. The following section presents a set of key questions that guided this study.

The Research Questions

The study was underpinned by the overarching question: What are teachers' perspectives on effective SRL implementation and reading comprehension in Grades 5 and 6? Three guiding questions directed this study. They were:

1. What are teachers' understandings of how they can acquire professional expertise for successfully implementing SRL in Grades 5 and 6 classrooms?
2. How do teachers understand effective SRL implementation in Grades 5 and 6?
3. What are teachers' understandings of effective SRL implementation in the context of reading comprehension among Grades 5 and 6 students?

Three theoretical propositions have emerged from the data analysis, serving as the foundation for understanding the perspectives of teachers regarding SRL implementation and reading comprehension. These propositions address the research questions and are presented below to provide insight into the findings.

Theoretical Propositions

The theoretical propositions generated from the study include the following:

1. Grades 5 and 6 teachers recognise the significance of specific PD approaches in acquiring the professional knowledge they deemed crucial for SRL implementation.
2. Grades 5 and 6 teachers recognise that identifying and developing student readiness is essential for effective SRL implementation.
3. Grades 5 and 6 teachers adjust SRL phases to align with the context of reading-related learning. They achieve this by emphasising epistemological beliefs regarding reading and leveraging social interactions to cultivate SRL skills on an individual level within the context of reading comprehension.

The findings are explored in relation to the above three theoretical propositions in the next section.

Theoretical Proposition 1

Theoretical Proposition 1 proposes that Grades 5 and 6 teachers recognise the significance of specific PD approaches in acquiring the professional knowledge they deem crucial for SRL implementation. This proposition is grounded on the participants' exposure to extensive PD opportunities, encompassing substantial educational resources. These opportunities included training events focused on SRL content knowledge, team teaching to support SRL pedagogical content knowledge, and teacher coaching aimed at developing teachers' knowledge of performing SRL. Acquiring professional expertise in SRL implementation was regarded as a gradual process of developing particular domains of professional knowledge that relied on diverse approaches to PD and necessitated a sustained approach.

The teachers' perspectives regarding top-down training events on SRL were shaped by the recognition that they were not afforded comparable opportunities to enhance their understanding of SRL. The teachers expressed a willingness to participate in training events

aimed at augmenting their knowledge of SRL, as they regarded it as an essential pedagogical undertaking. Hence, training events emphasising SRL theory and developing content knowledge proficiencies in SRL provided an important foundation for teachers to base their expertise in SRL implementation.

When implementing SRL principles into their teaching methods, the teachers exhibited a preference for collaborative team teaching experiences that entailed observing the SRL practices of their colleagues. Such observations were deemed a valuable learning resource for the educators, as they facilitated mutual learning and fostered the refinement of their pedagogical content knowledge regarding SRL. Additionally, the teachers exhibited a marked preference for teacher coaching PD opportunities that offered frequent one-on-one mentorship and opportunities to exercise their individual SRL abilities. This approach allowed the participants to perceive SRL from a learner's perspective rather than solely from a teacher's viewpoint. Such a perspective was considered vital in acquiring valuable insight into becoming and performing as a self-regulated learner. In Chapter Four, Figure 4 depicts how the participants viewed the PD process as a series of steppingstones that facilitated the acquisition of the professional knowledge necessary for effective SRL implementation.

While the existing literature currently lacks a definitive understanding of how teachers can effectively acquire professional expertise in SRL implementation (Cleary et al., 2022; Karlen et al., 2020; Spruce & Bol, 2015), theoretical proposition 1 presented in this study provides insight into the significance of specific PD approaches in enabling teachers to acquire the professional knowledge they consider crucial for implementing SRL in Grades 5 and 6 classrooms. It underscores teachers' preferences for a multifaceted and

sustained approach to PD that recognise the importance of continuous learning and development in the realm of SRL implementation.

Theoretical Proposition 2

Theoretical Proposition 2 posits that teachers recognise that the identification and development of student readiness is essential for effective SRL implementation. This study provides support for this proposition by demonstrating that the participants' understanding of effective SRL implementation was heavily influenced by student readiness, which was composed of three key components: conceptual knowledge of SRL, sophisticated epistemological beliefs, and a sense of personal relevance for SRL. The absence of these components was regarded as resulting in students relying on teacher-driven procedures and prompts, which limited their ability to control their approach to learning.

The teachers in this study believed that students' capacity to conceptualise the key ideas and principles of SRL impacted their readiness for effective use of SRL. They also recognised that students' epistemological beliefs about learning influenced the frequency and effectiveness of SRL. Creating a context in which SRL could become purposeful and meaningful for students was also found to be essential to effective SRL implementation. Hence, the teachers in this study reflected a constructivist-oriented understanding of SRL implementation that was based on the quality of student thinking and sense-making. They focused on exploring critical ideas and beliefs that students were wrestling with to prepare them to develop meaningful SRL practices effectively. Chapter Five's Figure 6 illustrates how the effectiveness of SRL implementation was influenced by the identification and development of student readiness, as observed by the participants.

This study provides support for Theoretical Proposition 2 by exploring how student readiness for SRL was a significant characteristic of the participants' understanding of

effective SRL implementation. This proposition highlights the significance of addressing student readiness to foster an environment conducive to effective SRL implementation. Student readiness constituted important pillars for the participants' teaching of SRL strategies and phases. Based on the application of these components to identifying and building student readiness for SRL, the study revealed several features associated with implementing Zimmerman's (2000) phases of SRL in the context of reading comprehension. These features are explored in the following section.

Theoretical Proposition 3

Theoretical Proposition 3 states that teachers adjust SRL phases to align with the context of reading-related learning. They achieve this by emphasising epistemological beliefs regarding reading and leveraging social interactions to cultivate SRL skills on an individual level within the context of reading comprehension. This proposition is supported by findings from the study, which investigated the participants' understanding of implementing Zimmerman's (2000) three phases of SRL in a reading comprehension context.

While Zimmerman's (2000) SRL phases are cyclical, this study conceptualised the participants' understanding of SRL implementation in reading comprehension contexts as a tiered approach where each level builds on the previous, reflecting a pyramid dynamic. The first level involved establishing reading-specific epistemological beliefs in students. The second level emphasised interactive social processes, such as small group discussions. The third level focused on individualised learning to consolidate knowledge and develop individual agency. In Chapter Six, Figure 8 presents a visual depiction of the fundamental characteristics of the participants' approach to enhancing students' SRL skills in reading comprehension.

This study revealed that the participants perceived a strong relationship between students' epistemological beliefs about reading and SRL during the forethought phase. The participants recognised that this phase was critical for forming learning goals based on reading habits and characterising successful readers to students, thus shaping their epistemological beliefs about reading and enhancing their reading self-efficacy. The role of epistemological beliefs in SRL is supported by Winne (1995) and Hofer and Pintrich (1997). Hofer and Pintrich (1997) argued that epistemic beliefs impact students' cognitive and metacognitive processes during SRL and task persistence. However, since the early stages of SRL research, no theoretical frameworks have elaborated on the role of epistemological beliefs in SRL. Only general notions of the role of personal epistemology and SRL have been provided to date (Ji et al., 2021; Muis, 2007; Muis et al., 2018), lacking an exploration into teachers' understandings and practices. This study revealed how the development of appropriate domain-specific epistemological beliefs underpinned the participants' tiered approach to SRL implementation in reading comprehension contexts. Moreover, the study found that critical thinking skills were developed when students engaged in group discussions that presented opposing ideas. The study also revealed that self-reflection allowed students to consolidate essential knowledge and SRL skills from group learning activities.

In reading comprehension contexts, social interactions were a catalyst for developing SRL skills at the individual level. Theoretical Proposition 3 is well-supported by the research evidence that uncovers the teachers' tiered approach to SRL implementation in reading comprehension contexts. The teachers prioritised the development of reading-specific epistemological beliefs, promoting interactive social processes, and encouraging self-reflection to develop SRL skills in students.

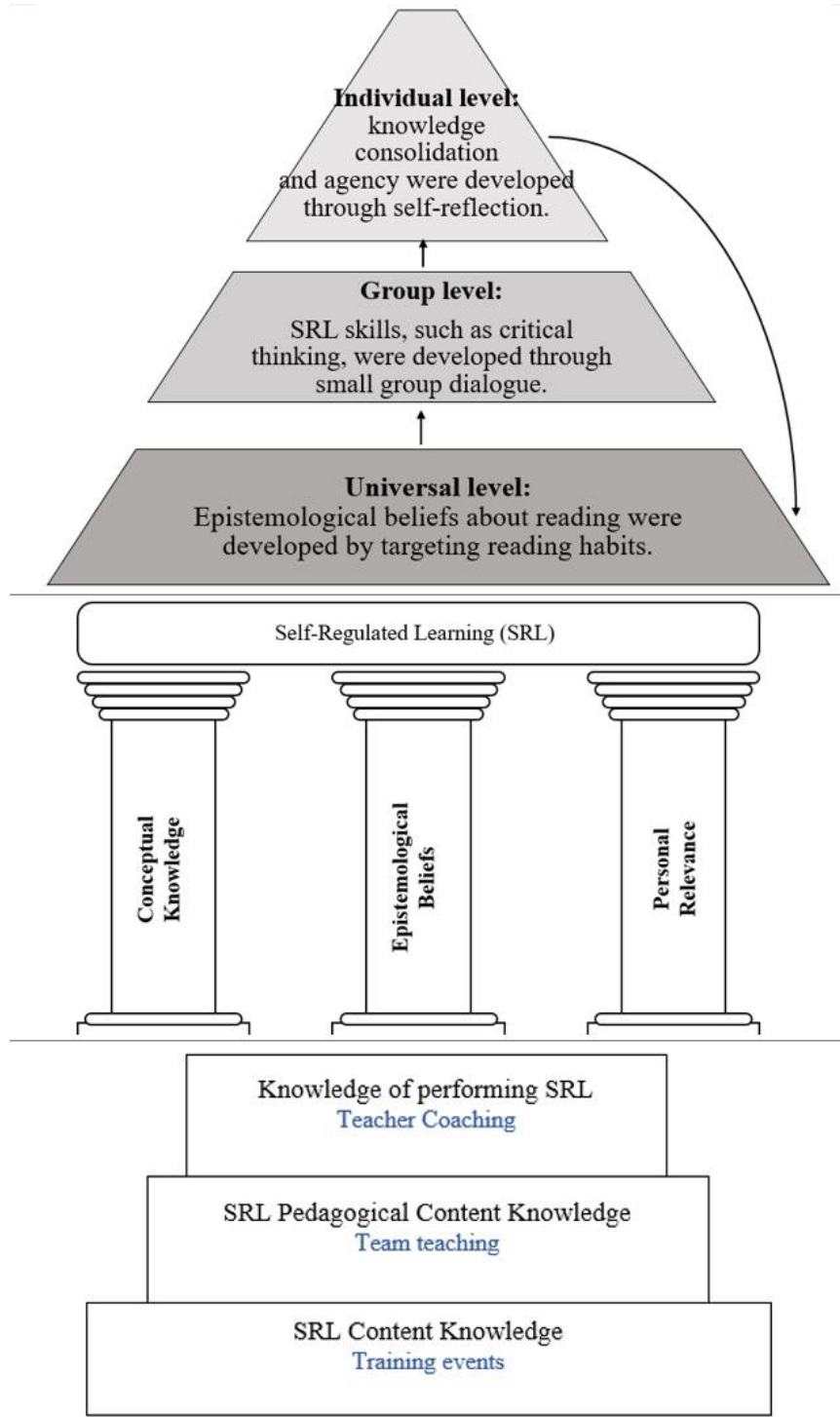
Overview

The findings from the data analysis have generated a set of theoretical propositions that will significantly contribute to the professional knowledge of teachers implementing SRL to enhance students' reading comprehension capabilities. These theoretical propositions have been generated in response to the research questions and are underpinned by findings that provide insights into teachers' perspectives. The culmination of these insights has resulted in the generation of a conceptual model that underpins effective SRL implementation and reading, as depicted in Figure 9 below; a model that presents a concise summary of the study's critical findings and their interrelationships.

This model is referred to as the Lyceum model, a place of learning with unique structures that support and are specially developed to accommodate a variety of activities within the structure as a whole. Although SRL is a cyclical process, the model presented herein represents the teachers' understanding of its implementation rather than the actual nature of SRL. During the study, the teachers' understanding of effective SRL implementation was linear, denoting the process as comprising distinct and sequential steps with a discernible foundation, progression, and culmination.

Figure 9

A Conceptual Model for Effective SRL Implementation and Reading Comprehension: The Lyceum Model.



The model can be approached from the bottom-up, where three distinct PD approaches are emphasised as critical for teachers' acquisition of the professional knowledge necessary for effective SRL implementation. These include training events focused on SRL content knowledge, team teaching aimed at SRL pedagogical content knowledge, and teacher coaching with an emphasis on performing SRL. This aspect of the model underscores the significance of teachers' professional knowledge that has been acquired through various PD approaches, which forms the bedrock for successful SRL implementation.

From the model's base, three pillars ascend that depict effective SRL implementation as identifying and developing student readiness. Student readiness was a critical support structure for students' long-lasting and effective use of SRL strategies and phases. The participants identified student readiness for SRL in terms of how well they could conceptualise SRL, their epistemological beliefs and their perceived relevance of SRL. By evaluating these areas, the participants identified students as ready to engage in and use SRL strategies effectively.

The model's top story, or roof, represents the domain-specific nature of SRL, which the teachers emphasised in the study. They acknowledged the necessity of instructing SRL in a manner tailored to teaching students in reading contexts, emphasising the importance of addressing reading-specific epistemological beliefs for the effective implementation of SRL. In the context of reading comprehension, the teachers focused student goals on reading habits to shape students' epistemological beliefs in reading. Group activities were essential for developing critical thinking skills that emerged through peer dialogue, while individual tasks like self-reflection were crucial for students to consolidate their knowledge and take ownership of their learning.

Consequently, this study has yielded a substantive model of SRL implementation and reading comprehension: The Lyceum Model. This model underscores a sequential configuration that prioritises three key elements: SRL-focused PD, student readiness, and SRL phases related to reading contexts. Specifically, the model highlights a linear structure in which teachers' knowledge of SRL content, pedagogy and processes constitutes important expertise that informs their instructional practices. Furthermore, the model highlights the significance of student readiness in sustaining student use of SRL strategies and phases. Lastly, the model emphasises the necessity of instruction that integrates SRL phases with skills and epistemological beliefs associated with reading. The implications of this model's findings are significant for both theory and practice, providing insights into the intricate interplay between teacher knowledge, student readiness, and the subject-specific nature of SRL phases. These implications are discussed further in the following section.

Implications from Findings

The following implications are considered in terms of their potential application to the implementation of SRL to improve students' reading comprehension skills in Grades 5 and 6. Specifically, the study uncovers implications for school leadership design of SRL-focused PD, teachers' identification and development of student readiness for SRL, and the application of Zimmerman's (2000) phases of SRL to develop reading comprehension. The following section will present an overview of these practical implications.

Implication 1: SRL-Focused PD

The conceptual model: The Lyceum illustrates the foundational role of PD and professional knowledge for teachers' acquisition of the professional expertise necessary for effective SRL implementation. This study recommends how school leadership can design SRL-focused PD for teachers, identifying three relevant PD approaches: training events,

team teaching, and teacher coaching. However, the model highlights that none of these approaches alone can provide the professional knowledge necessary for effective SRL implementation. Therefore, PD design for SRL is recommended to combine transmission, participatory, and coaching-based approaches to enable teachers to cross-link critical components of professional knowledge.

It is recommended that:

- 1.1 One of the PD approaches teachers receive includes a trained professional or expert in the field who can provide essential *SRL content knowledge*, including its concepts, models, and processes. Teachers will benefit from opportunities to consider the theoretical perspectives of SRL, as it is a complex and new educational initiative that requires specific knowledge that teachers have not typically received during their formal education (Dignath, 2021; Glogger-Frey et al., 2018; Spruce & Bol, 2015).
- 1.2 Teachers engage in participatory approaches to PD, such as team teaching. While various models of team teaching exist, the findings of this research reiterate the importance of shared teaching scenarios in which teachers combine classrooms, share the teaching of SRL lessons and collaborate on student assessment. This arrangement will situate teachers in a context-relevant environment to share insights on SRL and develop *SRL pedagogical content knowledge*.
- 1.3 Teachers are introduced to coaching sessions with a professional mentor that involves regular one-on-one meetings. These meetings should support teachers' SRL initiatives by creating a context for them to practice being self-regulated learners and to receive feedback. Furthermore, it is vital that teacher coaching applies the SRL cyclical processes of goal setting, strategy use and self-reflection. This will contribute to teachers' knowledge of how to be successful at SRL from a learner's perspective.

This study emphasises that the above PD opportunities provide essential building blocks of professional knowledge on which teachers can base their SRL implementation. For this knowledge to effectively inform teachers' implementation of SRL, ongoing PD is recommended, allowing teachers time to acquire and interact with these areas of professional knowledge. Based on teachers' acquisition of this professional knowledge, the study proposes subsequent implications for teachers' implementation of SRL in the classroom.

Implication 2: Identification and Development of Student Readiness for SRL

The Lyceum Model underscores the importance of constructivist principles in SRL implementation, prioritising students' thinking and sense-making over the mere transmission of information. While previous studies have identified effective SRL strategy instruction, including explicit and implicit approaches (Dignath & Buttner, 2018; Kistner et al., 2015), it is crucial for teachers first to prepare their students to receive strategy instruction.

The following recommendations are offered:

- 2.1 Teachers ensure that students display a conceptual understanding of SRL. Teachers must assess and identify students' current levels of knowledge and bridge the gap between their understanding of self-regulation and SRL in an academic context. Once identified, teachers can present examples that progress from students' understanding of self-regulation in familiar situations to SRL in educational settings. It is essential that students can link current levels of knowledge with any new SRL content.
- 2.2 Teachers provide students with opportunities to reflect on their beliefs about the nature of knowledge and learning or *epistemological beliefs* (Hofer & Pintrich, 2002). This requires students to evaluate, question, challenge and justify their views on

learning. It is essential that students can rethink old ideas and come to new conclusions rather than receiving facts about learning. The intended outcome should be for students to develop sophisticated epistemological beliefs that view learning as a dynamic process that can be developed (Winberg et al., 2019).

2.3 Teachers should recognise the relationship between the development of understanding and motivation to understand. They should highlight the role and benefits of SRL skills in pursuing various goals relating to sports, music, health, and relationships.. It is essential to note that the process of determining the role of SRL should not be based on predetermined abilities. Rather, students must individually assess the relevance of SRL to their unique experiences, goals, and interests, establishing a personalised connection to SRL.

Having discussed the recommendations for identifying and building student readiness for SRL, the study offers the following implication for teachers implementing Zimmerman's (2000) phases of SRL in the context of reading comprehension.

Implication 3: Zimmerman's (2000) Phases of SRL and Reading Comprehension

This study has uncovered valuable insights into how reading-specific epistemological beliefs can impact the implementation of SRL in reading contexts. Hence, the following practical implications for Zimmerman's (2000) phases of SRL are tailored explicitly to reading comprehension settings, as the top story of the conceptual model: The Lyceum, varies depending on the subject domain.

The following recommendations are proposed:

1.1 Teachers should take a holistic approach to SRL development, considering students' cognitive skills, beliefs, attitudes, and social interactions. They can engage students' epistemological beliefs about reading by directing their learning goals towards

reading habits rather than abilities. However, educators should avoid generalising students' learning-related beliefs across different subject domains. To shape students' beliefs about reading, teachers can use positive reading habits to characterise a successful reader, such as reading various texts, reflecting on reading experiences, or reading regularly. This study suggests that positive reading habits can also support students' reading self-efficacy, emphasising the role of active participation in reading and fostering a sense of ownership.

1.2 Teachers provide opportunities for students to engage in collaborative learning activities that promote critical thinking, such as small group discussions or debates. This can help students develop their understanding of the reading process by sharing and comparing their ideas. Teachers should avoid an evaluative role when facilitating group dialogue and instead value different perspectives, encouraging dialogue to shape students' perceptions of the reading process. The aim is for group dialogue to demonstrate to students that knowledge is complex, potentially biased and needs to be critically analysed.

1.3 Teachers invite students to practice the self-reflection phase individually and consolidate key ideas and perceptions gained during group activities. Encouraging students to reflect on their learning experiences can help them develop a deeper understanding of their strengths and weaknesses, identify improvement areas, and set future learning goals. Moreover, engaging in self-reflection can enhance metacognitive awareness, which is an essential aspect of SRL. Through self-reflection, students can better understand their own learning processes, leading to increased motivation, engagement, and academic success. Therefore, teachers should provide ample opportunities for students to engage in self-reflection and emphasise its value as an essential component of the SRL process.

The Lyceum Model provides a framework for developing SRL in reading comprehension contexts, focusing on students' epistemological beliefs about reading and developing SRL skills through social interactions and knowledge consolidation through self-reflection. By adopting effective pedagogical strategies based on these recommendations, teachers can enhance students' SRL and reading comprehension abilities.

The practical implications of this study demonstrate the potential advantages of incorporating SRL practices to enhance students' reading comprehension abilities. These implications underscore the significance of school leadership in designing SRL-focused professional development opportunities for teachers and the need for teachers to assess and cultivate student readiness for SRL. The study also highlights the effectiveness of addressing students' learning-related beliefs about reading and social interactions to foster the development of individual reading comprehension skills. By implementing these practical implications, teachers and school leaders can work together to create a learning environment that fosters SRL and promotes the development of reading comprehension skills. However, it is also essential to acknowledge the limitations of this study. The limitations will be discussed in the next section to provide a comprehensive understanding of the scope and implications of the study's findings.

Research Limitations

While this study has uncovered valuable insights into effective SRL implementation in reading comprehension, it is imperative to acknowledge its limitations. The study's scope was confined to one substantive area concerning a single Catholic Primary school in Victoria, which does limit the generalisability of its findings to other educational contexts. Additionally, the selection of the participants in the study was restricted to Grade 5 and 6 teachers, resulting in only 6 teachers participating in the study. This range of participants

was chosen due to the variance in student abilities and instruction across primary school age levels and the complexity involved in accounting for this. Two primary school grades were chosen to focus on gaining a deep understanding of SRL and reading comprehension among Grade 5 and 6 teachers. The study's scope was constrained to the implementation of SRL specifically within the context of reading comprehension. No exploration of SRL implementation in other curriculum areas occurred, as the primary focus of the study centered on reading comprehension.

Additionally, while the current study provides valuable insights into how participants understand effective SRL implementation, it does not directly address the design of PD or curriculum content. No surveys or quantitative methods were used to gather data on student SRL or reading comprehension skills, as these methods are inconsistent with Classic Grounded Theory and can potentially force the data (Glaser & Strauss, 1967). Furthermore, no student data was gathered, or student focus groups conducted. The central focus of the research was on how participants, in their role as teachers, understood effective SRL implementation. Therefore, caution should be exercised when generalising the results to other educational contexts. Further research is needed to expand the understanding of SRL implementation across a range of educational contexts and to explore the relationship between SRL implementation and student outcomes. Several recommendations for future research are identified in the following section.

Recommended Further Research

The limitations and delimitations of this study leave room for further research related to SRL implementation. These include:

1. Examining teachers' understanding of SRL implementation across other primary school settings. This would assist in establishing whether the principles identified in this study apply beyond the current group of teachers.
2. The identification of student perceptions of effective SRL approaches would provide another comparative perspective concerning the findings of this study which were based on the participants' perspectives.
3. The exploration of factors involved in creating a continuous approach to PD for SRL implementation for educators throughout their teaching career.
4. A further exploration into the confluence of processes resulting from the simultaneous engagement in multiple forms of PD on SRL. Understanding how different PD approaches interact and complement each other could provide valuable insights into the complex dynamics of professional learning in SRL implementation.
5. Investigating how teachers assess student readiness for SRL in other primary schools. This would assist in establishing whether the principles identified in this study concerning student readiness apply beyond the current group of teachers.
6. Examining the conceptual model: The Lyceum, across other subject domains in which different factors are considered when applying Zimmerman's (2000) phases of SRL. This would assist in establishing other critical domain-specific features of SRL implementation.
7. Examining the Lyceum Model across different primary school grades or high school settings in which different emphases are applied in student learning. This would assist in exploring the role of the principles identified in this study across different levels of education.
8. Examining the application of the Lyceum Model in large-scale curriculum change, supporting a national curriculum in primary school SRL implementation.

Concluding Remarks

SRL has been recognised as essential for academic success and lifelong learning (Taranto & Buchanan, 2020). However, further research is required into how it can be effectively implemented in the classroom to support students in developing this critical skill (De Smul et al., 2020). Despite the recognition of its importance, many studies prioritise research interventions or quantitative measures, overlooking the perspectives of teachers (Alvi & Gillies, 2020; Dignath & Sprenger, 2020).

This qualitative research project aimed to explore effective SRL implementation and reading comprehension in Grades 5 and 6 classrooms from teachers' perspectives. Unstructured interviews were conducted with teachers from a single primary school in Victoria, Australia, to gather data on their understanding of effective SRL implementation and reading comprehension in Grades 5 and 6 classrooms. Applying the principles of Classic Grounded Theory (Glaser & Strauss, 1967), the data generated by the participants were analysed to identify categories of findings that contributed to the development of theoretical propositions about SRL implementation and reading comprehension.

The study has provided valuable insights into teachers' perspectives, who play a pivotal role in introducing and supporting SRL in classrooms (Alvi & Gillies, 2020; Karlen et al., 2020). The findings have highlighted the crucial role of SRL-focused PD, student readiness for SRL, and the subject-specific nature of SRL implementation. Specifically, the study has shown that teachers view multiple approaches to SRL-focused PD as vital for developing critical areas of professional knowledge they deem necessary to implement SRL effectively. The study highlighted the importance of teachers undergoing targeted training events focused on SRL content knowledge, team teaching aimed at SRL pedagogical content knowledge, and teacher coaching with an emphasis on performing SRL. The

research findings have also emphasised the importance of student readiness for SRL based on constructivist principles such as students' conceptual understanding of SRL, epistemological beliefs, and personal relevance to SRL.

Additionally, the study has provided valuable insights into SRL implementation in reading comprehension contexts. It has highlighted the role of subject-specific epistemological beliefs and social interactions in developing students' SRL skills in reading comprehension. The study developed a substantive conceptual model, the Lyceum Model, which encapsulates effective SRL implementation as perceived by teachers in Grades 5 and 6. This conceptual model provides a clear philosophical platform and operational structure for implementing SRL and can help teachers teach students how to regulate their learning effectively.

Although the study has some limitations, it contributes to understanding effective SRL implementation and reading comprehension in Grades 5 and 6 from teachers' perspectives. Future research can complement these findings by observing actual behaviour and investigating other potential determinants of SRL implementation. This study provides valuable insights that can contribute to advancing theory and practice in SRL implementation and reading comprehension. Ultimately, these findings have the potential to enhance the national learning profile of students in Australia, specifically in the domains of SRL implementation and reading comprehension.

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Appendix A

Principal Information Letter

Project Title

Teacher perspectives on Self-Regulated Learning (SRL) and reading comprehension.

Application Number

(2019- 1057)

Principal Investigator

Associate Professor Michael T Buchanan

Student Researcher

Daniella Taranto

Student's Degree

Master of Education (Research)

Dear _____,

We would like to invite the upper-primary school teachers at your school to participate in a research project conducted by Australian Catholic University. The project is titled *Teacher Perspectives of Self-Regulated Learning and Reading Comprehension*.

What is the Project About?

Self-Regulated Learning (SRL) is a set of practices and strategies that enable learners to manage and regulate their thinking, behaviour, and environment to achieve personalised learning objectives. The ultimate goal of teaching SRL is to equip learners with the necessary skills and tools to become proactive and self-directed learners. This research is interested in individual teachers' perspectives on teaching SRL to upper primary school students. Given that reading comprehension has consistently been identified as a challenging area for students in Grades 5 and 6 on national and international assessments and the linkage between SRL

and reading comprehension skills, this study aims to investigate how teachers implement SRL in their classrooms to improve reading comprehension.

Who is Undertaking the Project?

This project is being conducted by Daniella Taranto and will form the basis for Higher Degree Research at Australian Catholic University under the supervision of Associate Professor Michael T Buchanan PhD. Associate Professor Michael T Buchanan's main strengths germane to the success of this study, are (i) skills and expertise in conducting in-depth unstructured interviews, (ii) a strong background in research in Catholic Schools, and (iii) many years of experience in qualitative research design and employing classic grounded theory.

Are There any Risks Associated With Participating in This Project?

This is a low risk study and the only foreseeable risk (which is minimal) is possibly the inconvenience of a 30-minute interview. The participants will know that participation is voluntary and that they are free to terminate the interview at anytime without consequence.

What will Participants be Asked to do?

Your approval is sought to visit your school and to invite the upper primary teachers to take part in a 30-minute interview on a day and time mutually suitable. The information attained will be strictly confidential.

This interview will involve:

- Asking questions in relation to participant perspectives in their role as teachers on the teaching of self-regulated learning and on teaching reading comprehension. The questions will be open-ended and the interview will go for approximately 30 minutes.
- The interview will be audio-recorded to ensure responses are correctly analysed by the researcher. Audio-recordings will also allow the researcher to re-examine notes.

- The location of the interview will be at a time convenient to the teacher/school and in their classroom.

How Much Time will the Project Take?

The interview will take approximately 30 minutes depending on how many comments participants wish to contribute. No follow up visit or questions are required.

What are the Benefits of the Research Project?

At a local level, this study will provide insights into the effective and non-effective methods of self-regulated learning and the existing issues surrounding its teaching from the perspectives of teachers and its role in reading comprehension. Nationally, there is limited research on self-regulated learning and reading comprehension from perspective of teachers and these insights may therefore be of interest to a country seeking to improve its reading comprehension results and for informing school wide approaches to self-regulated learning. International research and schools seeking to developing students into self-regulated learners may benefit from these findings that may be applicable to their own personal and contextual situations or places wanting to look at ways that offer another lens from which they can consider self-regulated learning and developing reading comprehension.

Can Participants Withdraw From the Study?

Participation will be well informed that participation in this study is completely voluntary and they are not under any obligation to participate. If they agree to participate, they can withdraw from the study at any time without adverse consequences. However, they cannot withdraw after completing their interview, as interview data will be coded and non-identifiable.

Will Anyone Else Know the Results of the Project?

Participants and the school is ensured confidentiality, as data will be non-identifiable: Data will be coded e.g. Participant A Recording, Participant A Transcript etc. The data will be stored in electronic format in a password protected computer and hard copies will be stored in Associate Professor Michael T Buchanan's key locked office in a key locked cabinet. On the completion of the study, the data in print form will be shredded and digital data will be erased from the computer it is stored on. The final results will be a collection of themes and ideas from all responses. It is intended that the findings of the research will be published in a peer reviewed scholarly journal, with non-identifiable information relating to participant responses. The school will also not be identified. The published journal will not have any identifying features and all data will be coded. Participants will have access to a copy of the publication.

Will I be able to find out the results of the project?

A summary of results will be made available to participants if requested, once the study has been completed.

Who do I contact if I have questions about the project?

Student Researcher

Daniella Taranto

Chief Investigator

Associate Professor Michael T Buchanan

What if I Have a Complaint or any Concerns?

The study has been reviewed by the Human Research Ethics Committee at Australian Catholic University (review number 2019-1057). If you have any complaints or concerns

about the conduct of the project, you may write to the Manager of the Human Research Ethics and Integrity Committee care of the Office of the Deputy Vice Chancellor (Research).

Manager, Ethics and Integrity

c/o Office of the Deputy Vice Chancellor (Research)

Australian Catholic University

North Sydney Campus

PO Box 968

NORTH SYDNEY, NSW 2059

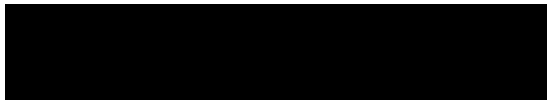
Ph.: 02 9739 2519

Fax: 02 9739 2870

Email: resethics.manager@acu.edu.au

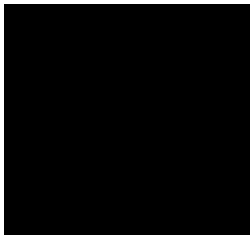
Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

I am Happy for my Teachers to be Invited to the Study! What Next?

Thank you for wishing to take part in this research. Please sign both of the attached permission letters. You should sign two copies and retain one copy for your records and return the other copy to Miss Daniella Taranto at  Taranto will then contact you to make a time to invite teachers to the study.

Your support for the research is most appreciated.

Yours sincerely,



Daniella Taranto

Higher Degree Research

Australian Catholic University

Appendix B**Principal Permission Letter**

Copy for Researcher

Project Title

Teacher perspectives on Self-Regulated Learning (SRL) and reading comprehension.

Application Number

(2019- 1057).

Principal Investigator

Associate Professor Michael T Buchanan

Student Researcher

Daniella Taranto

Student's Degree

Master of Education (Research)

Date:

Dear Miss Taranto,

Thank you for your request to recruit participants from _____ for the above-named research.

I have read and understood the Explanatory Statement regarding the research *Teacher Perspectives of Self-Regulated Learning and Reading Comprehension* and hereby give permission for this research to be conducted.

Yours sincerely,

(Signature of person granting permission)

Name

School Principal

Address

Appendix C

Participant Information Letter

Project Title

Teacher perspectives on Self-Regulated Learning (SRL) and reading comprehension.

Application Number

(2019- 1057).

Principal Investigator

Associate Professor Michael T Buchanan

Student Researcher

Daniella Taranto

Student's Degree

Master of Education (Research)

STUDENT'S DEGREE: Master of Education (Research)

Dear Participant,

You are invited to participate in the research project described below.

What is the Project About?

Self-Regulated Learning (SRL) is a set of practices and strategies that enable learners to manage and regulate their thinking, behaviour, and environment to achieve personalised learning objectives. The ultimate goal of teaching SRL is to equip learners with the necessary skills and tools to become proactive and self-directed learners. This research is interested in individual teachers' perspectives on teaching SRL to upper primary school students. Given that reading comprehension has consistently been identified as a challenging area for students in Grades 5 and 6 on national and international assessments and the linkage between SRL and reading comprehension skills, this study aims to investigate how teachers implement SRL in their classrooms to improve reading comprehension.

Who is Undertaking the Project?

This project is being conducted by Daniella Taranto and will form the basis for Higher Degree Research at Australian Catholic University under the supervision of Associate Professor Michael T Buchanan PhD. Associate Professor Michael T Buchanan's main strengths germane to the success of this study, are (i) skills and expertise in conducting in-depth unstructured interviews, (ii) a strong background in research in Catholic Schools, and (iii) many years of experience in qualitative research design and employing classic grounded theory.

Are There any Risks Associated With Participating in This Project?

This is a low risk study and the only foreseeable risk (which is minimal) is possibly the inconvenience of a 30-minute interview. The participants will know that participation is voluntary and that they are free to terminate the interview at any time without consequence. Additionally, there is a 2-week period between the interviews and de-identification of interviews during which participants can withdraw.

What will I be Asked to do?

Your approval is sought to partake in a 30-minute interview on a day and time you deem suitable. The information attained will be strictly confidential.

This interview will involve:

- Sharing your perspectives and experience in teaching students self-regulated learners and reading comprehension. The interview is unstructured, providing you with the freedom to determine what information you wish to share in relation to the topic and how you choose to respond. There are no correct or incorrect responses in these interviews. The researcher will ask only open-ended and clarifying questions, and the interview is expected to last around 30 minutes.

- The interview will be audio-recorded to ensure responses are correctly analysed by the researcher. Audio-recordings will also allow the researcher to re-examine notes. The audio-recordings will be transcribed by the research student. All electronic data will be kept secure in an ACU password protected server and all hard copies locked in a cabinet in a secure office at ACU Melbourne campus. On the completion of the research project, all electronic data will be erased and hard copies shredded.
- The location of the interview will be at a time convenient to you in your classroom.

How Much Time will the Project Take?

The interview will take approximately 30 minutes depending on how many comments you want to contribute. No follow up visit or questions are required. The research student will contact you by phone to inform you of the results of the study if you wish to receive them. Please let the research student know if you would like to be informed of the research results.

What are the Benefits of the Research Project?

At a local level, this study will provide insights into the effective and non-effective methods of self-regulated learning and the existing issues surrounding its teaching from the perspectives of teachers and its role in reading comprehension. Nationally, there is no study on self-regulated learning and reading comprehension from perspective of teachers and these insights may therefore be of interest to a country seeking to improve its reading comprehension results and for informing school wide approaches to self-regulated learning. International research and schools seeking to developing students into self-regulated learners may benefit from these findings that may be applicable to their own personal and contextual situations or places wanting to look at ways that offer another lens from which they can consider self-regulated learning and developing reading comprehension.

Can I Withdraw from the Study?

Participation in this study is completely voluntary. You are not under any obligation to participate. If you agree to participate, you can withdraw from the study at any time without adverse consequences. There is a 2-week period between the interviews and de-identification of interviews during which participants can withdraw. After this 2-week period, you cannot withdraw from the study as interview data will be coded and de-identified.

Will Anyone else Know the Results of the Project?

Participants are ensured confidentiality, as data will be de-identified: Data will be coded e.g. Participant A Recording, Participant A Transcript etc. The data will be stored in electronic format in a password protected computer and hard copies will be stored in Associate Professor Michael T Buchanan's key locked office in a key locked cabinet. On the completion of the study, the data in print form will be shredded and digital data will be erased from the computer it is stored on. The final results will be a collection of themes and ideas from all responses. It is intended that the findings of the research will be published in a peer reviewed scholarly journal, with de-identified information relating to participant responses and any of the school information. The published journal will not have any identifying features of participants or the school and all data will be coded. Participants will have access to a copy of the publication.

Will I be able to Find out the Results of the Project?

A summary of results will be made available to participants if requested, once the study has been completed.

Who do I contact if I have questions about the project?

Student Researcher**Chief Investigator****Co-Investigator**

Daniella Taranto

Associate Professor Michael

Dr Ingrid Willenberg

What if I have a Complaint or any Concerns?

The study has been reviewed by the Human Research Ethics Committee at Australian Catholic University (review number 2019-1057). If you have any complaints or concerns about the conduct of the project, you may write to the Manager of the Human Research Ethics and Integrity Committee care of the Office of the Deputy Vice Chancellor (Research).

Manager, Ethics and Integrity c/o Office of the Deputy Vice Chancellor (Research)

Australian Catholic University

North Sydney Campus

PO Box 968 NORTH SYDNEY, NSW 2059

Ph.: 02 9739 2519 Fax: 02 9739 2870

Email: resethics.manager@acu.edu.au

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

I Want to Participate! How do I Sign up?

Thank you for wishing to take part in this research. Please sign both of the attached consent forms. You should sign two copies and retain one copy for your records and return the other copy to your principal to lodge with the researcher. Your support for the research will be most appreciated.

Yours sincerely,



Daniella Taranto
Higher Degree Research
Australian Catholic University

Appendix D

Participant Consent Form

Project Title

Teacher perspectives on Self-Regulated Learning (SRL) and reading comprehension.

Application Number

(2019- 1057).

Principal Investigator

Associate Professor Michael T Buchanan

Student Researcher

Daniella Taranto

Student's Degree

Master of Education (Research)

I (*the participant*) have read (*or, where appropriate, have had read to me*) and understood the information provided in the Letter to Participants. Any questions I have asked have been answered to my satisfaction. I agree to participate in this interview, for approximately 30 minutes that will be audio-recorded, realising that I can withdraw my consent at any time (without adverse consequences). I agree that research data collected for the study may be published or may be provided to other researchers in a form that does not identify me in any way.

NAME OF PARTICIPANT:

SIGNATURE:

DATE:

SIGNATURE OF PRINCIPAL INVESTIGATOR (or SUPERVISOR):

DATE:

(and, if applicable)

SIGNATURE OF STUDENT RESEARCHER:

DATE:

Appendix E

Interview Protocol

Introductory Statement

I sincerely appreciate your generous commitment of time for this interview. The duration of the interview is estimated to be around 30 minutes, and please be aware that you have the freedom to pause or conclude the interview at any point, as well as take breaks as needed. The interview will be documented both in written form as notes and audio-recorded for transcription purposes. To maintain confidentiality, any identifying information pertaining to yourself or individuals mentioned will be encoded. The transcripts, recordings, and notes will be securely stored in locked physical storage within the ACU Education Department, as well as digitally on a secure computer.

The research is focused on establishing an understanding of teachers perspectives on Self-Regulated Learning and reading comprehension.

The aims of the study are:

4. To explore Grades 5 and 6 teachers' understanding of the factors contributing to their professional ability to implement SRL successfully.
5. To explore how Grades 5 and 6 teachers understand effective SRL implementation.
6. To explore how Grades 5 and 6 teachers understand effective SRL implementation in the context of reading comprehension.

This interview is designed to be unstructured, allowing you the freedom to determine what information you wish to share and how you choose to respond. There are no correct or incorrect answers in this context. However, to facilitate transcription, it would be beneficial if our responses remain centered around the topic at hand. Do you have any questions about the process?

Sample Questions for Clarification

- a) Is there anything else relating to the topic that you'd like to share?
- b) Can you talk a bit more about ___?
- c) Can you talk about some examples of what you just mentioned?
- d) Are there any other aspects of that you wish to add or expand on?

Final Statement

I greatly appreciate your invaluable contributions to this research project, which have played a crucial role in shaping its findings. I am committed to keeping you updated on the outcomes of this research and providing you with information about where you can access the findings. If you have any questions at this stage, please feel free to ask.

Once again, I extend my gratitude for your availability and participation in this interview.

Appendix G

Example of Completed Table for Data Analysis

Table 1

Example of Category Table for Data Analysis

Category 2	Subcategory	Evidence from the transcript (direct quote)	Key Findings
Preparing Students for Effective SRL Strategies and Phases	(i) Developing Students' Conceptual Understanding of SRL	<p>If we want the students' use of SRL to be long-lasting, they need to understand what it actually is. Sure, they can copy the strategies we give them, but will they understand why they are doing them, and will they use them in a different context without us asking them to? Definitely not. So, it becomes all about the groundwork we do. Also, even students who practice good self-regulation sometimes are not even aware that they are. They must be aware of what they are engaging in during those moments. That is the whole point." (POA)</p> <p>"SRL looks different in each subject. They need to have a sound understanding first before moving to subject strategies. We need to fix any misunderstandings they may have before going any deeper." (POE).</p>	<p>* Before incorporating specific changes in teaching practices related to Self-Regulated Learning (SRL), participants underscored the significance of ensuring students develop a cohesive understanding of the meaning of SRL and can recognize it in various contexts.</p> <p>* While cognitive and behavioral regulation occurs regularly throughout life, participants expressed concern that students lacked a well-established understanding of self-regulation in an academic setting. There was a shared worry that students might grasp procedural knowledge of strategies without comprehending the process or purpose of SRL.</p> <p>* Emphasis was placed on the importance of enhancing students' conceptual understanding of SRL to ensure that their implementation of</p>

		<p>“The goal is that they truly grasp what SRL is about – the ability to understand how our minds learn and striving for excellence” (POB).</p> <p>“Their (students’) understanding was quite limited, so we cannot just jump into specific strategies. We needed to get them ready first, and they needed to understand what SRL is before trying to put any strategies into practice” (POE).</p> <p>“We had first to explore what they already knew and start with what they were already familiar with. What is their thinking? Where are they at? What are their questions?” (POB).</p> <p>“We discussed how they may or may not practice self-regulation in the morning to get to school, or when someone cuts in the line at lunch, or when they focused on a specific goal.” (POD)</p> <p>“Then [they] applied those same aspects to the classroom to see if they</p>	<p>strategies was intentional and meaningful.</p> <ul style="list-style-type: none"> * Recognizing students' existing knowledge levels was deemed crucial as a starting point for effective teaching. * Participants used students' prior knowledge as an indicator of their current understanding, providing insight into the students' baseline knowledge. * This approach served a dual purpose: first, it allowed students to forge connections between their existing knowledge and new information. * Clear examples of everyday self-regulation practices were presented to students by participants. * Introducing progressive examples enabled students to draw connections between everyday self-regulation practices and more classroom-specific scenarios.
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		could make links between general self-regulation and self-regulation of learning.” (POA)	
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