Teachers' Perceptions of Supporting Self-Regulated Learning

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A Thesis Submitted to Cardiff University's School of Psychology
in Partial Fulfilment of the Requirements for the Degree of
DOCTOR OF EDUCATIONAL PSYCHOLOGY

Cardiff University School of Psychology,
Cardiff
2022

Acknowledgements

Firstly, I would like to thank all the teachers who took part in this research. Without your participation, this project would not have been possible.

Thank you to my Research Supervisor Dr Ian Smillie for the many hours of discussions, reflections, and support; I have learned so much throughout this journey and have thoroughly enjoyed being supervised by you. Thank you also to Dr Rachael Hayes who has supervised me throughout my training and helped shape me into the practitioner I am today. I would also like to thank my final year placement supervisor, Simon Vincent, who has helped me to balance my thesis and placement duties: I have appreciated your valuable guidance and understanding during this challenging time.

I would like to thank my family for their boundless patience, encouragement, love, and support throughout this journey. You have always believed in me and have reminded me of this at times when I have not believed in myself! Thank you to my friends for their understanding when I have not been as 'present' (particularly this past year!) and for their endless support, laughter, and distraction. Thank you to my fellow trainees whose friendship has made this journey unforgettable; I will always enjoy our time together and will continue to value your advice and insight.

Summary

This thesis consists of three parts: a literature review; an empirical paper; and a critical appraisal. The aim of this thesis is to explore teachers' perceptions of supporting self-regulated learning (SRL) in the context of education settings in England and Wales. Specifically, it aims to explore teachers' understanding and beliefs regarding SRL, and how they may seek to support it in their pupils.

Part 1: Major Research Literature Review

Part 1 provides a detailed review of the literature in this area. It provides the context of the research by introducing the concept of SRL, exploring key terminology, theory and relevant background information pertaining to learners' SRL development. It also discusses the relevance of this field to Educational Psychologists (EPs) and documents a scoping review of the literature (conducted on research investigating teachers' understanding of SRL, beliefs about SRL and pedagogical promotion of pupils' SRL). A rationale for the current research is provided, and the research questions are outlined.

Part 2: Major Research Journal Article

Part 2 presents an empirical paper, beginning with a brief overview of relevant literature, the rationale for the research, and the research questions. A detailed methodology for the research is presented, followed by a results section outlining descriptive statistics, and findings from domain summaries and thematic analysis. These findings are then considered in relation to the wider context and previous research in the discussion section. Implications for EPs and for future research are explored, as well as the strengths and limitations of the research.

Part 3: Major Research Reflective Account

Part 3 details a critical review of the study's contribution to knowledge and understanding in its field, and to the wider context of education and educational psychology. It offers a reflective and reflexive account of the researcher's journey of conducting the research, including appraising the decisions made throughout the process.

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List of Abbreviations

AEP	Association of Educational Psychologists
ALN	Additional Learning Needs
APA	American Psychological Association
ASSIA	Applied Social Science Index and Abstracts
ATES	Assessing How Teachers Enhance Self-Regulated Learning
CASP	Critical Appraisal Skills Programme
CPD	Continuous Professional Development
EEF	Education Endowment Foundation
EP	Educational Psychologist
ERIC	Education Resources Information Center
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SDL	Self-Directed Learning
SLT	Senior Leaderships Teams
SRL	Self-Regulated Learning
SRLTB	Self-Regulated Learning Teacher Belief Scale
SSRP	Small Scale Research Project

Teachers' Perceptions of Supporting Self-Regulated Learning

Part 1: Major Research Literature Review

Word Count: 10,207
(10,690 including figures and tables)

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2022

1. Introduction

Educational pursuits around the world strive to enable pupils to develop their responsibility of learning and become lifelong learners (Smith et al., 2016; Stevenson, 2017; Welsh Government, 2020). The field of self-regulated learning (SRL) is growing in tandem with learners in the emerging information-age paradigm of education (Huh & Reigeluth, 2018). In today's 21st century society, the creation of knowledge increases exponentially (De Smul et al., 2019a) and educational and economic conditions shift and change rapidly (Vassalo, 2013). Therefore, pupils' abilities to respond flexibly and creatively to various changing contexts (James et al., 2007) and be more active learners with more control over their learning process (McCombs & Whisler, 1997; Reigeluth & Karnopp, 2013; Reigeluth et al., 2008) is of the utmost importance and requires the ability to innovate, problem-solve, self-direct, work with others, and adapt – conditions that require and are aligned with SRL (Wolters, 2010; Zimmerman, 2002).

SRL can be defined as the ability to plan, monitor, and evaluate learning (Zimmerman, 2002) and comprises the cognitive, metacognitive, behavioural, motivational, and emotional / affective aspects of learning (Panadero, 2017). SRL has also been conceptualised as being the application of metacognition (monitoring and controlling your thought processes) and self-regulation (monitoring and controlling your emotions and behaviours) to learning (Mannion, 2020). Panadero (2017) asserted that as an umbrella term under which a considerable number of variables that influence learning are considered, SRL provides a holistic approach and has therefore "become one of the most important areas of research within educational psychology" (p. 1).

Research has demonstrated the crucial role teachers play in children's SRL development (Boekaerts, 1997; Dignath & Büttner, 2008; Moos & Ringdal, 2012; Perels et al., 2009; Stoeger et al., 2014). Karlen et al. (2020) posited that unlike teaching a specific school subject, which usually corresponds to individual teachers' interests (Richardson et al., 2014), teachers' motivation for teaching SRL may vary widely. Furthermore, SRL is not

systematically covered in teacher training, creating a wide range of experience with SRL between teachers (i.e., due to professional development; Karlen et al., 2020). Teachers' beliefs and knowledge directly affect their classroom practices (Calderhead, 1991; Pajares, 1992; Woolfolk et al., 2006). In the context of SRL-supportive approaches specifically, it has been highlighted that these should be investigated and contextualised in relation to teachers' beliefs and practices, yet are seldom explored in research (e.g., Alvi & Gillies, 2020a, 2020b).

1.1 Overview of the Literature Review

This literature review contains three sections. The first section focuses on the context of the research by introducing the concept of SRL and its relevance to Educational Psychologists (EPs); exploring key terminology, theory and relevant background information pertaining to learners' SRL development. It is acknowledged that this 'theoretical review' section does not allow for a thorough interrogation of the literature pertaining to SRL in general (nor is that its aim), rather, it aims to provide a broad overview of the key information directly related to the specific area of focus within this research project, and therefore contextualise the relevant literature in the second section of the literature review which subsequently led to the formation of the current research project. For this first section, a narrative style was adopted to enable the flexible exploration of a broad range of subjects (Demiris et al., 2019) within the large volume of research within the field of SRL.

The second section of this literature review documents a scoping review of the literature, conducted on research investigating teachers' understanding of SRL, beliefs about SRL and pedagogical promotion of pupils' SRL. This section of the review will use systematic methods to critically evaluate the existing research in these areas and aims to provide a comprehensive synthesis in order to draw broad and robust conclusions (Siddaway et al., 2019). A strength of scoping reviews is their flexibility in terms of enabling the summarisation of "findings from a body of knowledge that is heterogeneous in methods

or discipline; or identify gaps in the literature to aid the planning and commissioning of future research" (Tricco et al., 2021, p.467).

The final section of this literature review returns to using a narrative style to provide the rationale for the current research with subsequently developed research questions.

1.2 Search Terms and Sources

The empirical literature included in this review was obtained from online databases, including American Psychological Association (APA) PsycInfo, Scopus, Web of Science, Applied Social Science Index and Abstracts (ASSIA), and EBSCO (host Education Resources Information Center [ERIC]). A large range of databases was used since this research was considered to overlap with broad topic areas.

A sensitive search strategy was formulated by breaking down the research questions into individual concepts to create search terms. The search strategy included "teacher", "self-regulated learning", "understanding" and "beliefs". A search additionally incorporating the search strategy "promotion" did not yield additional articles, therefore this was not used in the final search. The search terms (Table 1) were based on synonyms of overarching key terms for each of the areas being researched. Additionally, terms were combined to narrow the number of results, increasing specificity in the search. Tailored search strategies were used in each database using the key terms (Appendix 1). This search was conducted in July 2021.

Table 1

Key Terms Utilised in the Literature Review

"teacher*"	"self-regulated learning"	"underst*"	"belie*"
"schoolteacher*", "educator*", "schoolm*", "educationalist*", "educationist*", "pedagogue*", "tutor"	"self regulated learn*", "self regulating learn*", "SRL"	"view*", "construct*", "knowledge", "concept*", "assess*",	"self efficacy", "self-efficacy", "attitude*", "opinion*", "perspective*", "experience*"

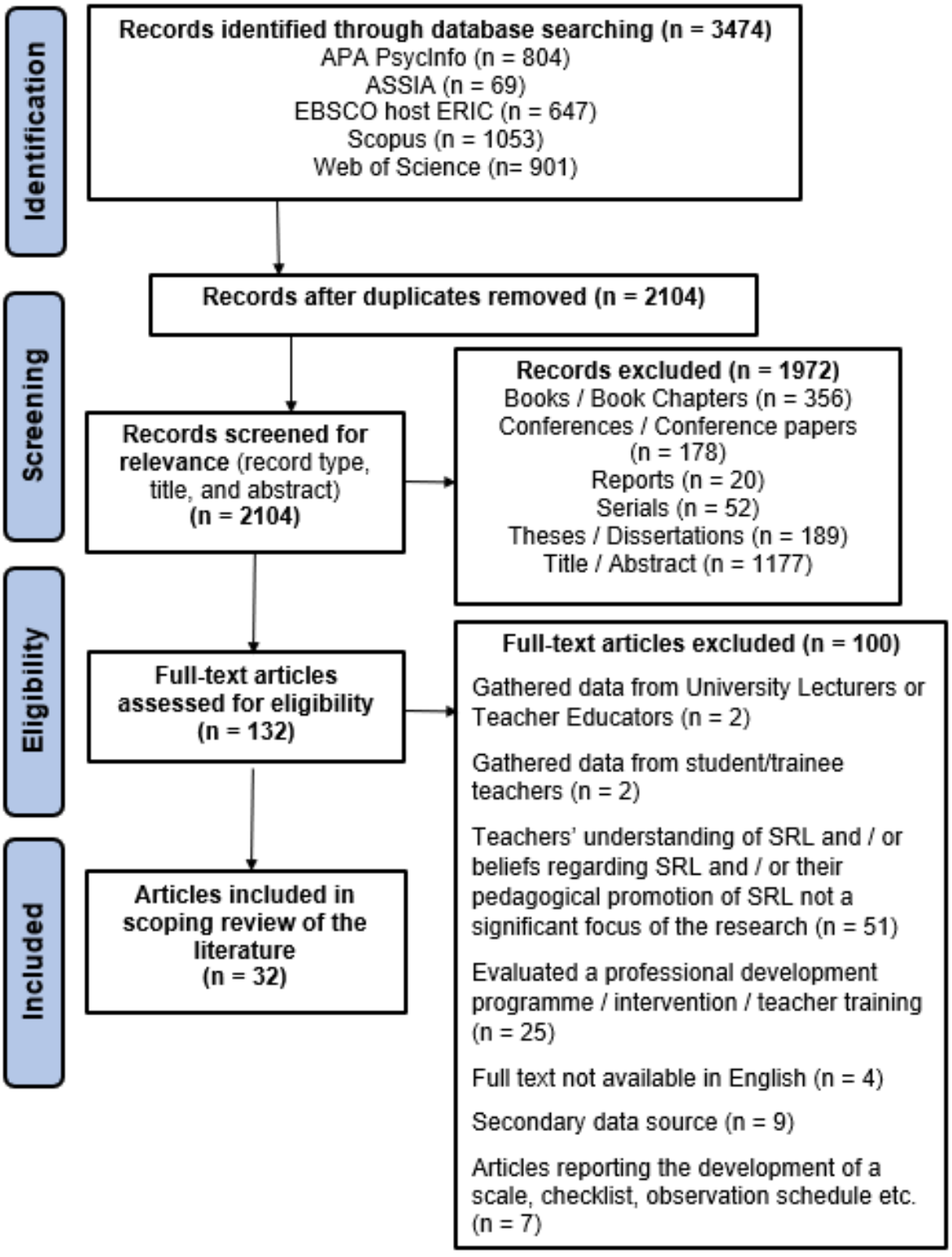
Note. An asterisk indicates a truncated search term, e.g., "self regulated learn*" would also include the phrases "self regulated learning", "self regulated learner" and "self regulated learners".

The results from each of the databases were exported to 'EndNote', a referencing software, to manage the citations. The results are reported in a flow diagram using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses ([PRISMA] Figure 1). PRISMA is a validated tool that increases methodological quality and the standard of reporting (Panic et al., 2013).

For Section 2 of this review (i.e., the scoping review of the literature), only the articles identified through the aforementioned process (Figure 1) were included. For Sections 1 and 3 (i.e., the narrative components of this review), further literature was selected through complementary manual searches of reference lists from those articles included in the scoping review of the literature, and use of grey literature to help contextualise the area of study, following a 'backwards snowballing' technique (Wohlin, 2014). Several papers identified during the "screening" and "eligibility" stages were also included in Sections 1 and 3. This approach was selected in order to identify relevant literature (e.g., seminal theories) and embed as systematic a process as possible to the narrative components of the review being conducted.

Figure 1

Articles for the Scoping Review of the Literature (Section 2) and Narrative Components of the Overall Literature Review (Sections 1 and 3).



1.3 Inclusion and Exclusion Criteria

The decision-making criteria used to guide the selection of literature included in the scoping review of the literature are outlined in Table 2. Further detail as to why articles / materials were excluded from the scoping review of the literature, with reference to a number of examples, can be found in Appendix 2.

Table 2

Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Gathered data from teachers (e.g., through interviews, checklists, observations etc.).	Did not gather data from teachers (e.g., gathered data concerning pupils such as test scores).
Gathered data from teachers of preschool aged children and / or school aged children and young people.	Gathered data from University Lecturers or Teacher Educators.
Gathered data from fully qualified teachers.	Gathered data from student / trainee teachers.
Considered teachers' understanding of SRL and / or beliefs regarding SRL and / or their pedagogical promotion of SRL. SRL was a significant focus of the research.	Teachers' understanding of SRL and / or beliefs regarding SRL and / or their pedagogical promotion of SRL not a significant focus of the research. Evaluated a professional development programme / intervention / teacher training.
Full text available in English.	Full text not available in English.
Primary data source (i.e., a journal article).	Secondary data source (e.g., systematic review, position paper, conference proceedings etc.) Articles reporting the development of a scale, checklist, observation schedule etc.

SRL in the context of teachers' understanding, beliefs and pedagogical promotion is a relatively new field therefore no exclusion criteria based on publication date was deemed

necessary. Similarly, worldwide publications were included in an attempt to gain a broad enough coverage of a developing field.

2. Section 1: Context of the Research

2.1 The Relevance of the Field of SRL to Educational Psychologists

The Organisation for Economic Co-operation and Development (2014) posited that one of the most important goals in contemporary education is to support pupils' development as self-regulated learners. The field of SRL is growing in tandem with learners in the emerging information-age paradigm of education (Huh & Reigeluth, 2018); in today's 21st century society, the creation of knowledge increases exponentially (De Smul et al., 2019a) and educational and economic conditions shift and change rapidly (Vassalo, 2013). Therefore, pupils' abilities to respond flexibly and creatively to various changing contexts (James et al., 2007) and be more active learners with more control over their learning process (McCombs & Whisler, 1997; Reigeluth & Karnopp, 2013; Reigeluth et al., 2008) is of utter importance and requires the ability to innovate, problem-solve, self-direct, work with others, and adapt – conditions that require and are aligned with SRL (Wolters, 2010; Zimmerman, 2002). Instruction in education settings has become increasingly more learner-centred rather than teacher-centred (Reigeluth & Karnopp, 2013), where learners are no longer passive receivers of information provided by instructors (Huh & Reigeluth, 2018). Moreover, the need for pupils to have the ability to self-regulate their learning has been shown dramatically in the current situation of worldwide school closure due to the Covid-19 pandemic (Dignath & Sprenger, 2020).

In recent years, evidence-informed approaches to teaching and learning in schools have been increasingly promoted through national educational policy and guidance (e.g., Department for Education, 2016; Donaldson, 2015; Sutton Trust-Education Endowment Foundation [EEF], 2021; Institute for Effective Education, 2019). Meanwhile, research in the area of SRL has "grown to occupy significant territory in the fields of education and psychology" (Winne, 2017, p. 9) and is "a staple in educational psychology texts" (Vassalo, 2013, p. 564). EPs provide a link between academic psychology and education (Elliot, 2000) and the role of the EP encompasses assessing evidence bases of different psychological

and learning theories and approaches (Cline et al., 2015). The Association of Educational Psychologists (AEP, 2021) further emphasised this recently, asserting that the focus of an EP's work is to share knowledge of psychology and child development to promote inclusive approaches that can help achieve best possible outcomes for all pupils.

2.2 Theoretical Views of Self-Regulated Learning

SRL is a sophisticated field with well-established theoretical frameworks (Lawson et al., 2019). Each theoretical view of SRL has its own assertation on aspects such as key processes, environmental conditions and acquired capacities (Tillema & Kremer-Hayon, 2002). Zimmerman and Schunk (2001) outlined several theoretical lenses of SRL. An *operant* view emphasises goals and how learners learn from them, stressing self-instruction and shaping of behaviour. An operant lens also emphasises the importance of the provision of relevant stimuli for learning. A *phenomenological* view stresses self-worth, subjective experiences, and development of a self-system; it emphasises personal identity. An *information processing* view stresses the transformation of information and self-monitoring with (relative to other views) little regard to environmental conditions. A *volitional* view emphasises controlled actions to regulate emotions and environmental conditions. Volition (see Corno, 1986) in this context refers to learners' commitment to, and capabilities they need to persist at, tasks, both challenging and tedious, in the face of distractions and setbacks on their path to achievements (Winne, 2017). A *Vygotskian* (also referred to as *social constructivist*) view emphasises that individuals co-construct knowledge through social interactions, and focuses on individuals as constructors of knowledge (see Mahn, 1999), stressing inner speech, dialogue, and mediation acquired through a hierarchy of developmental levels. A *constructivist* view considers personal theories, discovery learning and development of self-regulatory processes, based on conceptual change. Finally, a *social cognitive* perspective of SRL (originating from an emphasis of the triadic interaction between personal, behavioural and environmental components [Bandura, 1986]) stresses self-observation and enactive experiences, through modelling and social learning; emphasising

self-efficacy in learning (i.e., agency for a particular task in a specific setting). Both the Vygotskian and social cognitive theoretical lenses emphasise that SRL is more than an individual process; higher cognitive processes emerge from social interactions (Alvi & Gillies, 2021; Patrick & Middleton, 2002). The social cognitive perspective of SRL is widely recognised as the most prevalent and comprehensive approach (Huh & Reigeluth, 2018; Schunk, 2001; Zimmerman, 1998, 2000). The aforementioned theoretical views share the assumptions that knowledge is located within the individual (see Mahn, 1999) and that the control of the learning rests with the learner, who regulates his / her actions to achieve a certain goal, for example task performance (Dignath & Veenman, 2021; Paris & Paris, 2001).

More recent conceptualisations of SRL highlight a shared construction of knowledge (Hadwin et al., 2011). The *sociological* position suggests that knowledge construction is fundamentally social, and it is the process that constitutes knowledge, not the individuals (Gergen, 1982, 1995). There has been a shift of focus in the research on SRL in recent years from an individual constructivist perspective to a social constructionist perspective (Alvi & Gillies, 2015).

2.3 Models of Self-Regulated Learning

Brandmo et al. (2020) asserted that during the 1990s, following increased attention from numerous researchers, many theoretical models of SRL were developed. Evolving definitions, theories and associated models of SRL vary depending on their conceptualisation from different theoretical traditions (Peel, 2020). Whilst these models differ according to the perceived significance of the influence of cognition, metacognition, motivation and the environment on learning (Callan & Shim, 2019; Puustinen & Pulkkinen, 2001), there is widespread agreement that SRL consists of three components: cognition, metacognition, and motivation (De Smul et al., 2019a; Panadero, 2017; Zimmerman & Schunk, 2001).

Cognition is the mental process involved in knowing, understanding, and learning; cognitive strategies refer to skills such as memorisation techniques, rereading and

summarising, or subject-specific strategies like using different methods to solve equations in maths (EEF, 2018; Cornford, 2002). *Metacognition* refers to skills that help pupils organise their own learning processes and the way they monitor and purposefully direct their learning; metacognitive strategies refer to the strategies learners use to monitor or control their cognition, such as checking that their memorisation technique was accurate or selecting the most appropriate cognitive strategy for the task being undertaken (EEF, 2018; Schraw et al., 2006). Finally, *motivation* in this context refers to self-efficacy and the emotions pupils experience during their learning process that can affect this process positively or negatively (Perry, 2013; Shraw et al., 2006). Motivation in this context can therefore also be conceptualised as a learner's willingness to engage their metacognitive and cognitive skills and apply them to learning; motivational strategies will include convincing oneself to undertake a challenging revision task now – affecting the learner's current wellbeing – as a way of improving their future wellbeing in the test tomorrow (EEF, 2018).

Models of SRL can be divided into two groups (Winne & Perry, 2000). Layer models (e.g., Boekaerts, 1999) outline distinct levels of regulation, whereas process models (e.g., Zimmerman, 2000) illustrate the processes that take place during SRL and describe the interdependence of the components of SRL. Whilst a thorough introduction to the various prominent models of SRL is beyond the scope of this review (see Panadero, 2017 for a comprehensive introduction), Zimmerman's (2000) model will be discussed briefly to offer an example.

Described by Panadero (2017) as one of the most prolific SRL writers, Zimmerman has developed three models of SRL (Panadero & Alonso-Tapia, 2014). Zimmerman's (2000) model is the most cited cyclical model of SRL (Dignath & Sprenger, 2020) and is rooted in the social cognitive approach (Bandura, 1986). This model has been described as one of the most well-researched models (Bembenutty et al., 2013; Callan & Shim, 2019) that has often been the basis for school-based applications of SRL (Callan & Shim, 2019; Quackenbush & Bol, 2020). Whilst representing an interesting statistic, the number of citations accumulated

is an indicator that can be influenced by aspects not related exclusively to the quality of the model (Panadero, 2017).

Zimmerman's (2000) model is organised in three phases: forethought, performance and self-reflection. In the *forethought* phase, learners analyse the task, set goals, and plan how to reach them. In this first phase, a number of motivational beliefs drive the process and influence the activation of learning strategies. Next, the *performance* phase describes how learners execute the task whilst actively monitoring their progress, using a number of self-control strategies to remain cognitively engaged and motivated to finish the task. Finally, in the *self-reflection* phase, learners assess their task performance, making attributions regarding their success or failure. Due to the generation of self-reaction, these attributions can positively or negatively influence how the pupils approach the task in future performances (Panadero, 2017).

2.4 Development of Self-Regulated Learning

The concept of SRL was initially constructed as a stable individual characteristic, i.e., an aptitude ([see review by Boekaerts & Corno, 2005]; Winne & Perry, 2000). Research has now established that SRL capabilities are developed within social learning systems (Järvenoja et al., 2015; Volet et al., 2009). From a social cognitive perspective, SRL is not a natural outcome of children's development (Bembenutty, 2011). It is situation specific and highly context dependent, requiring the reciprocal interaction of both social and SRL processes (Peel, 2020), thus SRL is not mastered spontaneously (Boekaerts, 1997). Rather, it is a set of teachable skills that can be instilled by education and instruction (Zimmerman & Schunk, 2011) and therefore it should be fostered by teachers from primary school on ([for a review see Dignath & Büttner, 2008]; Donker et al., 2014) and be viewed as a complex and gradually developing competency that should be promoted gradually across subjects and grades (Heirweg et al., 2021).

For many years, it was widely agreed that metacognition and SRL develop after the age of eight (Dignath & Büttner, 2018; Veenman et al., 2006), however more recent research

has demonstrated that the early signs of SRL skills emerge as early as the preschool years (Bronson, 2000; Larkin, 2006) and continue to develop throughout adulthood (Schneider, 2015; Greene, 2018). There is evidence that executive functions (a precursor) develop rapidly between the ages of 2 to 7 years due to an increase in neural pathways in the prefrontal cortex (McKenna et al., 2017). The role of observational methodologies (i.e., research which is not reliant on children's verbal skills) has advanced work in this area (Whitebread & Neale, 2020) and has suggested an earlier emergence of SRL skills than was previously estimated (e.g., Annevirta & Vauras, 2006; Larkin, 2006; Perels et al., 2008; Perry, 1998; Perry & VandeKamp, 2000; Robson, 2010; Whitebread & Coltman, 2010); however, throughout development, SRL is still reliant on underlying developmental-psychological conditions, with some abilities continuing to depend on additional support (Venitz & Perels, 2019), for example via competent models (Bandura, 1977, 1986) and mediation (Vygotsky, 1978).

Whilst SRL and metacognitive strategies develop with age (Pressley et al., 1992), it has been argued that early promotion of SRL has an advantage over later support as learning behaviours are more malleable (Venitz & Perels, 2019) and during these first few years of schooling, children develop attitudes toward learning and self-efficacy (Whitebread, 2000). It is widely agreed that teachers can promote pupils' SRL in two different ways: directly through the instruction of strategies and indirectly through the construction of a supportive learning environment (Dignath & Büttner, 2018; Paris & Paris, 2001; Perry et al., 2008; Pressley & Harris, 2006).

In summary, based on developmental-psychological findings (e.g., Bronson, 2000; Zhang & Whitebread, 2017) and the theoretical assumptions of Bandura (1977, 1986), and Vygotsky (1978), the support of important reference persons plays a decisive role in the development of SRL behaviour (Venitz & Perels, 2019). Research has demonstrated the crucial role teachers play in children's SRL development (Boekaerts, 1997; Dignath & Büttner, 2008; Moos & Ringdal, 2012; Perels et al., 2009; Stoeger et al., 2014), and

supporting pupils' SRL development from an early age is strongly recommended (Dignath & Büttner, 2008; Montroy et al., 2016; Perry & Vandekamp, 2000). However, teachers need to have clear conceptualisations of SRL in order to promote these strategies in their classrooms (Boekaerts, 1999).

2.5 Benefits of Self-Regulated Learning

In an article for a special issue of *Contemporary Educational Psychology*, Zimmerman (1986) introduced SRL as "an important new approach to the study of student academic achievement" (p. 307). Major reviews of the literature (e.g., Bjork et al., 2013; Dunlosky et al., 2013; Greene et al., 2015; MacArthur, 2012; Morehead et al., 2016; Schunk & Greene, 2018; Winne, 2018), meta-analyses (e.g., Dent & Koenka, 2016; Hattie, 2009; Sitzman & Ely, 2011), and cross-national comparative research (e.g., Perry et al., 2015) have demonstrated the impact of the effective teaching and use of SRL strategies on pupils' achievement. Furthermore, SRL has been found to support pupils' learning and achievement across academic domains (Zimmerman & Schunk, 2011) such as reading (Thiede et al., 2012), mathematics (Callan & Cleary, 2018), writing (Graham & Harris, 2009), and science (DiBenedetto & Zimmerman, 2013). SRL has also been found to support pupil achievement across many countries and cultures (Callan et al., 2017).

Given these findings, it has been hypothesised that at-risk pupils would be likely to benefit from increased levels of SRL skills (Peeters et al., 2016). Metacognition, motivation, and self-regulation have been found to contribute more towards academic achievement than does intelligence (Kriegbaum et al., 2014; Steinmayr et al., 2011; Veenman & Spaans, 2005).

As well as findings regarding pupils' achievement, a large volume of research has indicated the desirability of SRL for pupils due to its positive relationship with cognitive and social competence (Colman et al., 2006; Wolters, 2011), cognitive control (e.g., Birk et al., 2018; Hussey et al., 2017; Mayer, 2017), motivation (Dignath & Büttner, 2008; Vrieling et al., 2012); wellbeing (Ryan & Deci, 2000) and on performance both in and outside of the school

setting such as engagement in lifelong learning (Cornford, 2002; Duckworth & Seligman, 2005; Fontana et al., 2015; Fuchs et al., 2003; Nota et al., 2004).

2.6 Self-Regulated Learning Versus Other Approaches

2.6.1 Self-Regulated Learning vs Self-Directed Learning

It is important to make a distinction between SRL and self-directed learning (SDL), which differ theoretically (Saks & Leijen, 2014; Loyens et al., 2008; Jossberger et al., 2010). SDL theory has its origins in adult education whereas SRL theory originates from educational psychology and is mainly studied in the school context (Boekaerts, 1999; Loyens, et al., 2008; Voskamp et al., 2020). Jossberger et al. (2010) posited that SDL concerns learning at the macro level (designing the whole learning process), whereas SRL occurs at the micro level (effectively and efficiently accomplishing a learning task designed by the teacher). It could be argued that SRL skills are a condition for SDL, however SDL is not a condition for SRL (Saks & Leijen, 2014).

2.6.2 Comparison with Other Approaches

The Sutton Trust-EEF Teaching and Learning Toolkit (2021), an accessible summary of a wide range of approaches to improving teaching and learning, rated metacognition and self-regulation as *high impact for very low cost, based on extensive evidence* (246 studies were identified). Metacognition and self-regulation approaches to teaching were rated as being less expensive, having a stronger evidence-base, and having a higher impact than: individualised instruction, mentoring, one-to-one tuition, reducing class size, repeating a year, small group tuition, summer schools, and teaching assistant interventions. This research found that the potential impact of metacognition and self-regulation approaches is high (+7 months additional progress over the course of a year).

2.7 Global and UK Context

Historically, SRL has been regarded as a competence suitable for older learners (e.g., Veenman et al., 2006), however recent educational developments, such as the implementation of digital learning environments, in particular due to school closures in the scope of the Covid-19 pandemic, have highlighted the importance for all learners to develop their SRL skills (Dignath & Sprenger, 2020).

The literature has consistently concluded that promoting SRL should be a major goal for today's primary and secondary education (Dignath & Sprenger, 2020). Many educational authorities (both national and international institutions) officially recognise the importance of SRL (e.g., via the curriculum) and have incorporated the instruction of SRL strategies in their educational programs as part of a lifelong learning initiative (e.g., the European Framework of Lifelong Learning [EU Council, 2002]). For example, SRL is an integral aim of the German education system (Venitz & Perels, 2019), and in Flanders (Belgium), the implementation of SRL in primary education has been part of the national curriculum since 1997, through cross-curricular targets 'learning to learn' (De Smul et al., 2019b). However, even in these geographical areas SRL implementation is still considered to be an educational innovation due to it being insufficiently ingrained in schools (Heirweg et al., 2021).

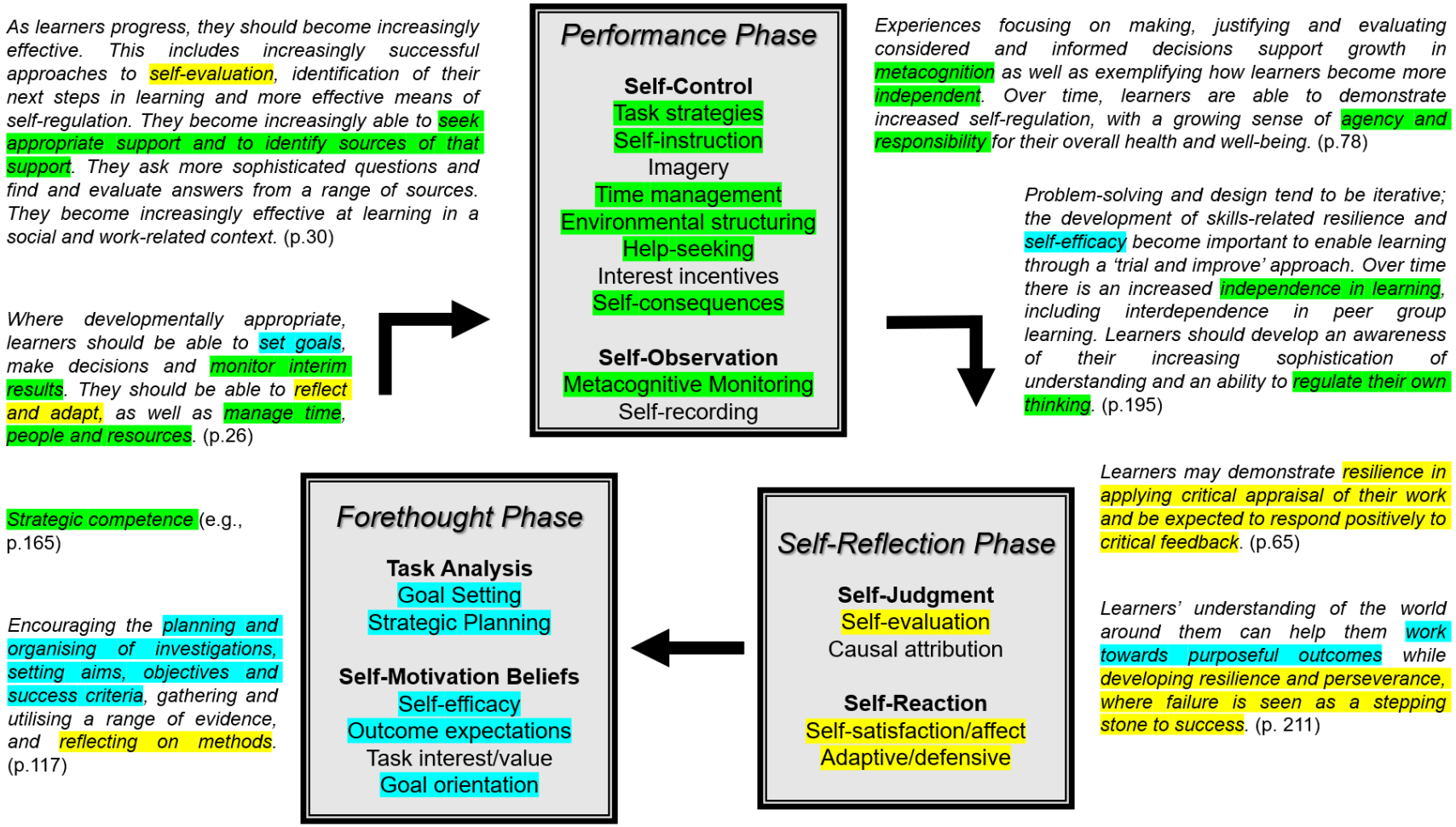
The EEF (an independent UK charity founded in 2011 by the Sutton Trust) issued a guidance report titled *Metacognition and Self-Regulated Learning* in 2018 following the *Metacognition and Self-regulation* strand of their Teaching and Learning Toolkit (most recent update in 2021) being consistently ranked as one of the most popular. The guidance report offers seven practical, evidence-based recommendations to support teachers (including early years practitioners and those in post-16 settings) to develop metacognitive knowledge and skills in their pupils.

The Curriculum for Wales (Welsh Government, 2020) references both metacognition and self-regulation. It could be argued that current educational policy and guidance in England and Wales supports pedagogical practices aimed at the development of pupils'

capabilities for SRL; particularly given that “the focus of learning in schools is seen as shifting from a knowledge-based focus to a skills-based curriculum” (Oates, 2019, p. 1). Whilst there is no explicit reference to SRL in the English and Welsh National Curriculums, several principles on which the curriculums are based point to the provision of learning environments that enable the development of SRL skills. In an attempt to illustrate this point, Figure 2 presents Zimmerman and Moylan’s (2009) cyclical phases model of SRL alongside quotes from the Curriculum for Wales (Welsh Government, 2020).

Figure 2

Cyclical Phases Model of SRL (Zimmerman & Moylan, 2009) Alongside Quotes from the Curriculum for Wales (Welsh Government, 2020)



2.8 Educational Psychologists in England and Wales: Their Key Role As 'Agents for Change'

> Constructivist ideas encourage educators, researchers and policy makers to move away from traditional and embrace progressive education in order to prepare learners for future responsibilities and help them succeed beyond school years (Dewey 1938). Based upon the foundation of interdisciplinary competence and constructivist ideas, several approaches highlight the active role of the learner during learning. These include, for example, SRL. (Alvi & Gillies, 2021, p. 135)

The role of the EP should be aimed at identifying potential initiatives for change in the system (Beaver, 2011). The explicit promotion of SRL does not appear to be widespread in England and Wales (the term 'SRL' is not mentioned in either National Curriculums, however the Curriculum for Wales [Welsh Government, 2020] refers to metacognition and self-regulation separately). Given the large body of research demonstrating the impact of the effective teaching and use of SRL strategies on pupils' achievement (e.g., Greene et al., 2015; Hattie, 2009; Perry et al., 2015), and that EPs are committed to improving outcomes for children and young people (Cline et al., 2015), the field of SRL appears particularly relevant to EPs in England and Wales.

EPs promote psychology within wider systems such as Local Authorities and education settings (AEP, 2021). To facilitate change, the role of the EP requires working at multiple levels with a range of other professionals, for example to provide training and develop the skills of others such as teachers (Cline et al., 2015; AEP, 2021). As noted by Beaver (2011), change does not always require more in terms of resources; it usually requires new approaches and strategies to enhance educational and developmental opportunities. The Sutton Trust-EEF Teaching and Learning Toolkit (2021) highlighted that metacognition and self-regulation approaches to teaching are relatively inexpensive, have a high impact, and possess a strong evidence-base. Furthermore, research in the area of SRL, and specifically teachers' perceptions and promotion of SRL, is needed to inform

educational policy (Thomas et al., 2020). As professionals who engage in work at strategic levels, EPs may have a role in contributing to this area.

2.9 Teacher Determinants in Fostering Self-Regulated Learning

Norman (1980) argued that pupils need to be taught *how* to learn, positing "it is strange that we expect students to learn yet seldom teach them to learn" (p. 97). This has been reiterated more recently in calls for explicit and repeated teaching of SRL strategies to provide pupils with the tools to maximise their achievement (e.g., Finley & Benjamin, 2012; Lawson et al., 2019; Lipsey et al., 2017). Despite SRL being a teachable skill (Boekaerts, 1997; Zimmerman, 2002) and evidence that SRL strategies can be integrated into classroom lessons with beneficial effects (e.g., Berglas-Shapiro et al., 2017; Dignath et al., 2008; Spörer & Brunstein, 2009), this practice does not appear to be widespread (Lawson et al., 2019).

Karlen et al. (2020) posited that unlike teaching a specific school subject, which usually corresponds to individual teachers' interests (Richardson et al., 2014), teachers' motivation for teaching SRL may vary widely. Furthermore, SRL is not systematically covered in teacher training, creating a wide range of experience with SRL between teachers (i.e., due to professional development; Karlen et al., 2020).

Teachers' beliefs and knowledge directly affect their classroom practices (Calderhead, 1991; Pajares, 1992; Woolfolk et al., 2006). Recent research suggests that differences between teachers' promotion of SRL can be attributed to differences in their understanding (i.e., knowledge) of SRL (Geduld, 2017; Peeters et al., 2016; Spruce & Bol, 2015), beliefs about SRL in terms of its usefulness (De Smul et al., 2019b), beliefs about SRL in terms of its suitability for pupils (Peeters et al., 2016; Thomas et al., 2020), or self-efficacy beliefs in promoting SRL (Alvi & Gillies, 2020b; De Smul et al., 2019b; Karlen et al., 2020; Saraç & Tarhan, 2020).

2.10 The Relevance of Investigating Teachers' Perceptions of Supporting SRL to Educational Psychologists

> Between the increase in research, the appeal of SRL for the twenty-first century, and attention in education rhetoric, it is essential that researchers, practitioners, and policy-makers, alike, critically consider diverse interpretations of SRL in order to encourage nuanced conversations and ethically informed practice. (Vassalo, 2013, p. 564)

Evidence-based practice is at risk of reductionism: features and contexts are important, and there may be a focus on outcomes at the expense of insights into the mechanisms involved in the processes of change (Cline et al., 2015). Dozois (2013) emphasised that communicating 'evidence' can obscure the practical implications of a theoretical finding; and one must consider the translation of ideas from theoretical evidence to applied practice (Gulliford, 2015). In educational contexts, the linking of input variables to outcome variables is complex (Cartwright et al., 2009), particularly due to the social processes involved in supporting pupils (Gulliford, 2015). Researchers from qualitative traditions value capturing complexities rather than controlling or reducing phenomena; they explicitly position *features* as central to the research account, prioritising the *perceptions* of those involved, their *contingencies* with the environment (Ling, 2012; Stufflebeam, 2003) and the *values* that influence delivery (Wilcox, 2003). Petticrew et al. (2013) highlighted that research has an important role to play in 'learning about' an intervention, as much as about the effects of the intervention itself. It could be argued that this is also relevant when considering teaching approaches (i.e., promoting SRL). Researchers have also emphasised the need for research to illustrate the differences in teachers' SRL promotion by identifying contextual variables and influences (Creemers & Kyriakides, 2006; Muijs et al., 2014; Peeters et al., 2016).

Educational research should take into account teacher beliefs because of the way these can inform classroom practice (Pajares, 1992). With regards to SRL-supportive

approaches specifically, it has been highlighted that these should be investigated and contextualised in relation to teachers' beliefs and practices, yet are seldom explored in research (e.g., Alvi & Gillies, 2020b). Alvi and Gillies (2020b) suggested that this may be "because SRL is generally viewed and described in terms of individual's characteristics, abilities and skills" (p. 14).

As scientist-practitioners (Cline et al., 2015) who work closely with education setting staff and are knowledgeable about the education system (AEP, 2021), EPs appear well placed to investigate teachers' perceptions of supporting SRL. Furthermore, as a profession that supports both empiricist and constructive precepts (Gulliford, 2015; Miller et al., 2008), EPs can ensure a strong methodological foundation for any approaches adopted (Burnham, 2013), given that rigour and quality in EP research is prioritised over methodological preferences (Gulliford, 2015).

3. Section 2: Scoping Review of the Literature

3.1 Objectives of the Scoping Review of the Literature

The **scoping review of the literature** had three review questions:

1. What does previous research tell us about what teachers understand by the term SRL?
2. What does previous research tell us about teachers' beliefs about SRL?
3. What does previous research tell us about how teachers support their pupils' SRL?

This scoping review of the literature was used in order to determine the extent, range, and variety (i.e., volume and coverage) of the body of literature regarding the above review questions, whilst exploring the nature (characteristics) of said 'evidence' (Munn et al., 2018; Tricco et al., 2021). It also aimed to critically evaluate and integrate the findings of relevant studies addressing the review questions.

3.2 Method

Scoping reviews follow a structured process (Munn et al., 2018). Relevant aspects of the *PRISMA Extension for Scoping Reviews* (see Tricco et al., 2021), a 27-item checklist, were used to ensure transparent reporting of the results of the current scoping review. With regards to the search methods used for the identification of articles, and criteria for considering articles for this scoping review, see sections 1.2 (p. 4) and 1.3 (p. 7) respectively.

3.3 Data Collection and Analysis

A total of 2104 studies were identified through the search engines once duplications were removed. These studies were first screened based on record type, title and abstract. With regards to record type, due to the number of publications identified and in the interest of time management, only empirical articles were included (i.e., books, conference papers etc. were excluded). As a result of the initial screening, 1972 were excluded. The resulting 132 full texts were assessed for eligibility using the inclusion and exclusion criteria (Table 2, p. 7)

and 32 studies were selected to be included (Figure 1, p. 6). The 32 studies were critically appraised. Critical appraisal provides a systematic way of assessing the validity, results and usefulness of published research papers (Hill & Spittlehouse, 2001). A novel checklist was developed by the researcher (see section 3.5.1 below and Appendix 3). Following the critical appraisal, all 32 studies remained in the literature review as they were all considered to have value in answering the research questions.

3.4 Data Synthesis

A 'narrative synthesis' approach to the scoping review was conducted; this approach relies primarily on the use of words and text to summarise and explain the findings of the synthesis (Popay et al., 2006). Decisions about which data were extracted from individual studies were guided by the review questions (Popay et al., 2006). The textual description for each of the individual studies included details of the context, data collection methods, and the findings in terms of the research questions (see Appendix 4).

3.5 Results

3.5.1 Demographic Information Regarding the Included Studies

As can be seen from Table 3, of the 32 studies, the majority investigated primary school teacher populations (in total, 23 studies). Sixteen studies included secondary school teachers, and only one study included preschool teachers. One study did not report this data.

Table 3

Sample of Teachers Used by the studies in the Scoping Review of the Literature

Sample	Number of Studies
Preschool teachers	1
Primary school teachers	14
Secondary school teachers	7
Primary and Secondary School teachers	9
Not reported	1
Total	32

The 32 included studies came from 14 different countries across five continents (see Table 4), with 16 (50%) being from countries in Europe.

Table 4

Location of Studies Included in the Scoping Review of the Literature

Location	Number of Studies
Africa	3
Asia	5
Australia	5
Europe	16
North America	3

3.5.2 Critical Appraisal of the Included Studies

In order to assess the validity, results and contribution of the research papers, a novel checklist was developed for this scoping review of the literature, using aspects of the Critical Appraisal Skills Programme (CASP) Qualitative Checklist (CASP, 2018) and Woolfson's (2011) Checklist for Critical Analysis for Quantitative Studies (adapted from

Rudestam & Newton, 2007). The novel checklist required the following questions to be answered for each of the 32 studies: (1) Was there a clear statement of the aims of the research? (2) Were the major theoretical concepts clearly explained and defined? (3) Was the research design appropriate to address the aims of the research? (4) Were materials (e.g., questionnaires, observation schedules etc.) adequately described? (5) Was the data analysis sufficiently rigorous? (6) Is there a clear statement of findings? (7) Are the interpretation of results and conclusions drawn in keeping with the results presented?

The results of the critical appraisal with reference to each individual study are presented in a table in Appendix 3 and are summarised below.

Was there a Clear Statement of the Aims of the Research?

With regards to the first statement in the novel checklist, it was deemed that all 32 studies presented a clear statement of the aims of the research.

Were the Major Theoretical Concepts Clearly Explained and Defined?

A range of theoretical concepts were found to have been used by previous research to explore the research questions of the current review. Fifteen of the studies presented models of SRL by Zimmerman (1989, 2000, 2001, 2002, 2008; Zimmerman & Moylan, 2009), and four studies presented Boekaerts' (1999) model. Three studies presented novel theoretical frameworks (e.g., Peel, 2020) and three studies approached their research using a systemic lens, for example Alvi and Gillies (2020b) employed a systems-ecological perspective (Bronfenbrenner, 1979) and proposed an integrative ecological model of SRL-in-context. Other theoretical views informing the research explored in this review included the Self-Regulated Learning Strategy Development Model (Harris & Graham 1992), Experiential Learning Theory (Kolb & Kolb, 2009), and the Job Demands-Resources model (Bakker & Demerouti, 2007).

All but one of the studies provided information regarding the major theoretical concepts: Marchis (2011) did not state theoretical view(s) in detail, however this study did briefly outline SRL with reference to Pintrich (1995, 2000) and Zimmerman (2001).

Was the Research Design Appropriate to Address the Aims of the Research?

It was deemed that all but one of the studies utilised a research design appropriate to address the aims of the research. Mahendiran & Kumar (2017) stated “the primary aim of this study is to explore the impact of self-regulated learning on teaching-learning process among teacher educators in Tiruvannamalai District” (p. 1624). However, they then used statistical analyses to explore whether demographic variables (e.g., teachers’ gender and age) were related to attitudinal differences to SRL or differences in how SRL was perceived. It was therefore felt that the design of the research did not address the research aim.

A range of research designs were used by the 32 studies to answer the research questions relevant to the current review. In broad terms, 19 studies utilised a quantitative design, 11 utilised a qualitative design (including four case studies), and two studies used a mixed-methods design. The 32 studies included in this review used a range of data collection methods (see Table 5), however 22 (68.75%) of these used questionnaires to gather data, with 17 (53.12%) of all studies collecting only questionnaire data. Four studies (all qualitative designs, two being case studies) also collected artifacts (e.g., work samples, pictures etc.).

As highlighted by Dignath and Veenman (2021) and again in the current review of 32 studies, research conducted to investigate teaching practices are usually based either on teachers’ self-report or on classroom observation methods.

In critiquing empirical means for exploring SRL, Winne (2017) argued that observational schedules remove the participants’ ‘voice’, i.e., observations can capture only overt behaviour, and not the underlying mental processes (Veenman & van Cleef, 2019). Data obtained from observations are also influenced by when they occurred (i.e., specific

lessons) and the researcher's ability to capture and adequately describe SRL prompts and activities (Spruce & Bol, 2015). Furthermore, teachers may behave differently due to their knowledge that they are being observed (demand characteristics / reactivity of measurement; Dignath et al., 2013).

As highlighted by Dignath and Veenman (2021), whilst questionnaires can be administered economically to large groups (in terms of time and costs), these 'offline' self-reports can suffer from validity problems. Winne (2017) argued that self-report tools (e.g., questionnaires and interviews) may overly lead participants. There is also a risk with questionnaires that teachers might not fully understand the terminology that is used (Dignath et al., 2013). Cross-sectional self-report data can also be biased by the way teachers felt at the time they filled out the questionnaire (De Smul et al., 2019b) or took part in the interview. In the context of exploring teachers' perceptions regarding SRL, it has been argued that whilst self-report measurements can only illuminate the *perceptions* of a participant's behaviour, this can still contribute to a better understanding of this behaviour (Heirweg et al., 2021) and likely reflects teachers' perceptions of their habitual behaviour (Karlen et al., 2020). Dignath et al. (2013) suggested that research utilising interviews conducted with teachers can provide deeper insight into teachers' thinking than can questionnaires.

Because research has found that teachers' self-reports of their promotion of SRL do not consistently align with findings from classroom observations of teachers' SRL instruction (e.g., Dignath & Büttner, 2018), self-report measures such as questionnaires and interview schedules may elicit socially desirable responses and are at risk of prompting over- or under-estimation of the actual behaviour (Boekaerts & Corno, 2005; Cromley & Azevedo, 2006) due to teachers needing to reconstruct earlier teaching behaviour from memory, where retrieval may fail or be biased (Dignath & Veenman, 2021). In addition, behaviours that occur over several school weeks (captured with self-report measures) may differ from one-time observations of the teachers' classroom behaviour (Karlen et al., 2020). However, in the context of SRL, differences between self-report and observational data are to some

Table 5

Data Collection Methods of Studies Included in the Scoping Review of the Literature

Data Collection Method	Studies	Number of Studies
Interviews only	Peeters et al. (2016) Geduld (2019)	2
Lesson Observations only		0
Questionnaire(s) only	Lombaerts et al. (2007a) Lombaerts et al. (2009) Krečič & Grmek (2010) Marchis (2011) Chatzistamatiou & Dermitzaki (2013) Tanrıseven (2013) Steinbach & Stoeger (2016) Mahendiran & Kumar (2017) Soliman & Alenazi (2017) Huh & Reigeluth (2018) Yan (2018) Callan & Shim (2019) De Smul et al. (2019b) Karlen et al. (2020) Saraç & Tarhan (2020) Thomas et al. (2020) Heirweg et al. (2021)	17
Interviews and Questionnaire(s)	Dignath & Sprenger (2020)	1
Interviews and Lesson Observations	Alvi & Gillies (2015) Geduld (2017) Dignath & Büttner (2018) Alvi & Gillies (2020a) Alvi & Gillies (2020b) Geduld & Sikwanga (2020) Peel (2020) Alvi & Gillies (2021)	8
Lesson Observations and Questionnaires	Pauli et al. (2007) Dignath et al. (2013) Kistner et al. (2015)	3
Interviews, Lesson Observations and Questionnaire(s)	Spruce & Bol (2015)	1
Total		32

extent to be expected, given that different measurement instruments are used to capture different aspects or perspectives of implementation (Patrick & Middleton, 2002), and given that different tools may be based on different underlying assumptions and constructs regarding a phenomenon.

It is advisable to have multiple sources of data to triangulate findings (Creswell, 2013), therefore studies utilising only one measurement and therefore collecting data from a single source may not capture a more holistic representation of teachers' understanding, beliefs, or promotion of SRL, particularly given the complexities of SRL. Triangulating data from multiple sources provides a more comprehensive portrait of teacher beliefs, knowledge and practice, including differences that emerge among the various measures (Spruce & Bol, 2015). It has been argued that "case studies offer a rigorous and comprehensive frame of inquiry which allow researchers to conduct in-depth investigations within natural settings" (Alvi & Gillies 2020b, p. 4).

Were Materials (e.g., Questionnaires, Observation Schedules etc.) Adequately Described?

The majority of the studies adequately described the materials they used, with only four studies providing insufficient information in this regard (Alvi & Gillies, 2015; Marchis, 2011; Peel, 2020; Peeters et al., 2016). These are discussed further below.

Questionnaires.

A range of questionnaires was used by the studies, and the number of scales administered varied depending on the scope of the research (i.e., some used only one questionnaire whereas others used multiple scales / questionnaires). The Self-Regulated Learning Inventory for Teachers (Lombaerts et al., 2007b) was used by six studies, the Self-Regulated Learning Teacher Belief Scale ([SRLTB] Lombaerts et al., 2009) was used by five studies (with an additional two using revised or adapted versions of the SRLTB) and the Teacher Self-Efficacy Scale to Implement Self-Regulated Learning (De Smul et al., 2018)

was used by two studies. Adapted versions of existing questionnaires and / or scales were used by eight studies, and novel questionnaires and / or scales were developed for use in ten studies. Of the studies utilising questionnaires for data collection, all but Marchis (2011) were felt to have given adequate information about the questionnaire's key features, theoretical background and examples of questions. Marchis (2011) developed a questionnaire for their study, however due to their lack of outlining a clear theoretical background to their research, and given that they did not provide clear theoretical justifications for specific questions (simply stating that questions were "formulated based on the theory of SRL and on the previous researches about teaching methods which develop students' SRL skills" [p. 10]), it was deemed that their materials were not adequately described.

Observations.

Three studies used the Assessing How Teachers Enhance Self-Regulated Learning (ATES), described by Dignath et al. (2013), to code observations. The ATES instrument has been tested for reliability and validity (Dignath & Büttner, 2018). Five studies used novel observation instruments developed for the purposes of their research, and these were clearly outlined, including references to their theoretical foundations. Two studies used observation instruments adapted from previous research and provided references to these measures. Of the studies utilising observations for data collection, two studies (Peel 2020; Alvi & Gillies, 2015) did not provide sufficient details of the protocol, methods or theoretical underpinnings of the measure. For example, Peel (2020) simply described the observations as "relatively unstructured" (p. 267).

Interviews.

Twelve studies utilised interviews for data collection, with eight of these specifying the use of semi-structured interviews. It was deemed that adequate information regarding their interview schedules were provided in nine studies. Three studies were deemed as not

providing sufficient detail regarding their interview schedules (Alvi & Gillies, 2015; Peel, 2020; Peeters et al., 2016) whether this be in terms of providing very little information and / or providing no examples of questions.

Was the Data Analysis Sufficiently Rigorous?

The majority of the studies clearly outlined their data analyses, appearing rigorous in their approach and presentation. It was deemed that two studies were unclear regarding their approach and methods for data analyses (Alvi & Gillies, 2015; Geduld, 2017).

Is there a Clear Statement of Findings?

It was deemed that 29 of the studies clearly stated their findings. Mahendiran and Kumar (2017) did not present findings in relation to the aim of the research, and instead presented findings related to demographic variables of teachers. It was difficult to understand and interpret their findings; furthermore, findings were not related to previous research. Tanrıseven (2013) presented some findings in an unclear way, e.g.,

> According to another result yielded by the research, primary school teachers' sense of efficacy in students' engagement, teaching strategies, classroom management and general sense of efficacy is at a quite efficient level. (p. 299)

Due to terms such as *quite efficient* not being defined, it was difficult to interpret certain findings. Krečič and Grmek (2010) presented only a selection of the results; notably, all results presented were statistically significant findings. This suggested possible 'cherry picking' of results which would have reduced the validity of their research.

Are the Interpretation of Results and Conclusions Drawn in Keeping with the Results Presented?

Almost all studies were felt to have interpreted results and made conclusions in keeping with the results presented, whilst also drawing links between their findings and those of previous research. It was deemed that Mahendiran & Kumar (2017) made huge claims, and this was

due to using language such as ‘proved’; e.g., “The results of the study proved that there is a significant attitudinal difference among the teacher educators based on their gender and age group*”* (p. 1631).

3.5.1 Narrative Synthesis of the Findings

Despite the variability in terms of their quality and rigour, all 32 studies were deemed to be able to provide some value in answering the research questions. As a result, the findings from all 32 papers were synthesised in a table to answer the three research questions (see Appendix 4).

3.6 Discussion

3.6.1 What Does Previous Research Tell Us About What Teachers Understand by The Term SRL?

16 studies were considered to provide information regarding what teachers understand by the term SRL. Whilst studies reported great variability in teachers’ theoretical and practical knowledge of SRL, many teachers were found to have a limited understanding of what SRL (Callan & Shim, 2019; Dignath & Büttner, 2018; Dignath & Sprenger, 2020; Geduld, 2017, 2019; Karlen et al., 2020; Soliman & Alenzai, 2017; Spruce & Bol, 2015) and metacognition (Dignath & Büttner, 2018; Dignath et al., 2013) entails. This finding was consistent across a range of research designs (both qualitative and quantitative) where both self-report measures (questionnaires and / or interviews) alone, and self-report measures used in conjunction with observational data, were used to collect data. Geduld et al. (2017) further found that teachers had limited understanding regarding their role in their pupils’ SRL development. Studies also highlighted misconceptions regarding teachers’ understanding of SRL, for example describing SRL as pupil autonomy and self-directedness (e.g., Dignath & Sprenger, 2020) rather than as a regulation process.

Research utilising observation techniques alongside gathering teachers’ views revealed that teachers report greater SRL promotion than observers do, or that teachers’ perceptions of how they develop SRL were not aligned with their actual teaching practices to

develop SRL, suggesting teachers lack knowledge regarding how to promote SRL (Dignath & Büttner, 2018; Dignath et al., 2013; Geduld, 2017; Geduld & Sikwanga, 2020). Studies utilising these techniques also found that if teachers' knowledge regarding SRL was low, so was their application of it in their classroom (Geduld, 2017; Spruce & Bol, 2015). Similarly, Karlen et al. (2020) found that teachers' pedagogical knowledge of SRL significantly predicted their self-reported implementation of SRL. Teachers' SRL knowledge was also found to explain differences in instructional decisions regarding SRL support (e.g., Peeters et al., 2016).

Teachers' conceptualisations and understanding of SRL were found to include motivational components and processes (Alvi & Gillies, 2020b; Callan & Shim, 2019; Dignath & Sprenger, 2020; Krečič & Grmek, 2010) as well as cognitive and metacognitive aspects (Callan & Shim, 2019; Dignath & Sprenger, 2020). Whilst Dignath and Sprenger (2020) found that no teachers referred to the regulation of emotions, Alvi & Gillies (2021) reported that in their case study, the teacher demonstrated an awareness that "reason and emotion are inextricably related and are essential for regulation of learning" (p. 151).

Whilst two studies found that demographic and background variables such as gender and years' teaching experience were not found to influence teachers' knowledge and understanding of SRL (Lombaerts et al., 2009; Soliman & Alenazi, 2017), Krečič and Grmek (2010) found differences in teachers' understanding of SRL relative to their level of professional development, where those with an advanced level of professional development demonstrated more process-oriented conceptions of SRL and placed a greater emphasis on pupils' motivation.

3.6.2 What Does Previous Research Tell Us About Teachers' Beliefs About SRL?

22 studies were considered to provide information regarding teachers' beliefs about SRL. Quantitative research utilising questionnaires (e.g., Heirweg et al., 2021; Karlen et al., 2020; Mahendiran & Kumar, 2017; Soliman & Alenazi, 2017; Spruce & Bol, 2015) and qualitative research utilising interviews (e.g., Geduld, 2019; Spruce & Bol, 2015) found that

teachers generally expressed positive beliefs about SRL, for example perceiving it as important or beneficial (De Smul et al., 2019b; Heirweg et al., 2021; Huh & Reigeluth, 2018; Yan, 2018), and perceiving it as a requirement for academic achievement (Geduld, 2017).

Studies found that whilst teachers agreed with the concept of supporting their pupils to become self-regulated learners, many of them reported feeling unsure about how to do so (Dignath & Büttner, 2018; Dignath et al., 2013). Self-efficacy beliefs were found to be strongly related to teachers' SRL implementation: those who did not feel they were able to promote SRL were less likely to promote SRL in their practice (Alvi & Gillies, 2020b; De Smul et al., 2019b; Karlen et al., 2020; Saraç & Tarhan, 2020; Tanrıseven, 2013); furthermore, relationships were found between teachers' self-efficacy to promote SRL and their SRL beliefs (i.e., teachers who perceived SRL as more important for their pupils felt more competent in promoting SRL; De Smul et al., 2019b; Heirweg et al., 2021). Geduld and Sikwanga (2020) found that teachers believed that factors such as subject knowledge and passion were also important regarding their ability to foster SRL skills in their pupils.

Many studies found a relationship between SRL beliefs and (self-reported / observed [depending on research design]) SRL implementation (Alvi & Gillies, 2020b; De Smul et al., 2019b; Geduld, 2017; Kistner et al., 2015; Lombaerts et al., 2009; Peeters et al., 2016; Yan, 2018), however Steinbach and Stoeger (2016) did not. Both primary and secondary school teachers were found to hold beliefs about pupils not being 'ready' for SRL, or SRL not being suitable for some pupils; for example, due to within-child factors such as age (Peeters et al., 2016; Spruce & Bol, 2015; Thomas et al., 2020), perceived ability (i.e., SRL being for only high-achieving pupils [Peeters et al., 2016]) and gender (Peeters et al., 2016). Other studies reported that teachers identified systemic challenges that influence their ability to promote pupils' SRL, such as curriculum coverage (Alvi & Gillies, 2020b; Geduld, 2019), classroom environment and resources (Alvi & Gillies, 2020b), and pupils' socio-economic status (Alvi & Gillies, 2020b; Peeters et al., 2016). Peeters et al. (2016) found that almost all teachers referred to the role of pupil characteristics as influencing to some degree their disposition to

SRL promotion, and whilst some teachers were motivated to instruct SRL due to certain pupil characteristics, others felt demotivated.

Differences in terms of teachers' beliefs regarding SRL were found amongst teachers based on their gender (Mahendiran & Kumar, 2017; Soliman & Alenazi, 2017), age group (Mahendiran & Kumar, 2017), age of pupils taught (Yan, 2018) and years' teaching experience (Soliman & Alenazi, 2017).

3.6.3 What Does Previous Research Tell Us About How Teachers Support Their Pupils' SRL?

22 studies were considered to provide information regarding how teachers support their pupils' SRL. Studies collected self-report data, observational data, or both, to provide information in relation to this research question. Teachers were found to promote pupils' SRL through encouraging and cultivating pupils' goal setting and strategy planning (Alvi & Gillies, 2020a; Chatzistamatiou & Dermitzaki, 2013; Peel, 2020; Tanrıseven, 2013), use of cognitive strategies (Dignath & Büttner, 2018; Geduld, 2019; Peel, 2020), metacognitive skills and self-observation processes ([i.e., monitoring] Alvi & Gillies, 2020b, 2021; Huh & Reigeluth, 2018; Marchis, 2011; Chatzistamatiou & Dermitzaki, 2013; Spruce & Bol, 2015; Tanrıseven, 2013), self-efficacy (Marchis, 2011; Tanrıseven, 2013), self-evaluations and self-reflection skills ([including in terms of affective and motivational reactions to the performance result] Alvi & Gillies, 2015, 2020a, 2021; Chatzistamatiou & Dermitzaki, 2013; Geduld & Sikwanga, 2020; Tanrıseven, 2013).

Other studies found that in order to develop pupils' SRL, teachers emphasised the use of social interactions and mediation (Alvi & Gillies, 2015, 2020a, 2020b; Peel, 2020), prioritised and targeted pupils' motivation (Alvi & Gilles, 2020b, 2021; Geduld & Sikwanga, 2020), applied constructivist learning principles (Alvi & Gillies, 2020a; Dignath & Büttner, 2018), or incorporated an experiential learning approach (Alvi & Gillies, 2021); reflecting implicit prompting of strategic behaviour, rather than explicit strategy teaching (Alvi & Gilles, 2015; Dignath & Büttner, 2018; Kistner et al., 2015). However, Geduld (2019) and Alvi and

Gilles (2020a) found that teachers used a combination of implicit and direct teaching of SRL strategies.

Whilst Lombaerts et al. (2007a) found that teachers promoted SRL as a total concept with a comparable emphasis on all phases of the SRL process, other studies found that teachers emphasised and focused on specific aspects of SRL and not on others (Dignath & Büttner, 2018; Huh & Reigeluth, 2018; Karlen et al., 2020; Marchis, 2011; Spruce & Bol, 2015). For example, Spruce and Bol (2015) found that teachers activated SRL among their pupils during the monitoring phase of learning, but hardly during the planning phase, and even less during the reflection / evaluation phase of the learning cycle. Some studies found that generally, teachers instructed very few metacognitive (Dignath & Büttner, 2018; Dignath et al., 2013; Geduld, 2019; Spruce & Bol, 2015) and motivation strategies (Dignath & Büttner, 2018) and rarely instructed strategies in an explicit way (Dignath et al., 2013; Kistenr et al., 2015).

Many studies found that whilst teachers varied greatly, generally their implementation of SRL practices was limited (Dignath et al., 2013; Geduld, 2017, 2019; Lombaerts et al., 2007a; Spruce & Bol, 2015; Thomas et al., 2020) and teachers reported that opportunities for SRL are not realised in every lesson (Pauli et al., 2007). However, other studies found that teachers promoted (or claimed to promote) SRL consistently (Tanrıseven, 2013; Yan, 2018).

Lombaerts et al. (2007a) found that teachers reported a clear gradual introduction of SRL over primary school stage levels. Similarly, Dignath and Büttner (2018) found differences between how teachers fostered SRL among primary and secondary school pupils, and Saraç and Tarhan (2020) found that primary school teachers reported more SRL promotion for older pupils than younger pupils.

With regards to teacher characteristics which influence the extent to which they promote SRL, Chatzistamatiou and Dermitzaki (2013) and Yan (2018) found significant

differences between male and female teachers (female teachers reported more use of these strategies), however this was not replicated by Thomas et al. (2020). Chatzistamatiou and Dermitzaki (2013) found that experienced teachers reported significantly more frequent use of self-regulatory strategies than novice teachers. However, Saraç & Tarhan (2020) and Thomas et al. (2020) found that younger novice teachers reported more frequent SRL promotion than older, more experienced teachers. Saraç and Tarhan (2020) found that the amount of SRL practices was also affected by class size: teachers with more than 15 children reported less frequent SRL promotion, however this was not found by Thomas et al. (2020).

4. Section 3: Rationale for the Current Research

4.1 Summary and Rationale for the Current Research

This literature review has highlighted the importance of investigating teachers' perceptions of supporting SRL. SRL is a sophisticated field with well-established theoretical frameworks (Lawson et al., 2019), and as an umbrella term under which a considerable number of variables that influence learning are considered, SRL provides a holistic approach and has therefore "become one of the most important areas of research within educational psychology" (Panadero, 2017, p. 1). With regards to the definition and framing of SRL in the context of this research, a social cognitive theoretical perspective (widely recognised as the most prevalent and comprehensive approach [Huh & Reigeluth, 2018; Schunk, 2001; Zimmerman, 1998, 2000]) stressing the importance of modelling and social learning is adopted. SRL is not a natural outcome of children's development (Bembenutty, 2011) and is more than an individual process.

Research has demonstrated the impact of the effective teaching and use of SRL strategies on pupils' achievement (e.g., Bjork et al., 2013; Dunlosky et al., 2013; Sutton Trust-EEF, 2021; Hattie, 2009; Schunk & Greene, 2018; Winne, 2018). From a social cognitive perspective, SRL capabilities are developed within social learning systems (Järvenoja et al., 2015; Volet et al., 2009) requiring support via competent models (Bandura, 1977, 1986) and mediation (Vygotsky, 1978). As highlighted by the EEF's (2018) guidance report *Metacognition and Self-Regulated Learning*, "teachers should acquire the professional understanding and skills" (p.6); i.e., because SRL is a set of teachable skills that can be instilled by education and instruction [Zimmerman & Schunk, 2011]), the concept of SRL, and the important role teachers play, needs to be explained in order for it to be promoted effectively. Indeed, research has demonstrated the crucial role teachers play in children's SRL development (Boekaerts 1997; Dignath & Büttner, 2008; Moos & Ringdal, 2012; Perels et al., 2009; Stoeger et al., 2014). Differences between teachers' promotion of SRL can be attributed to differences in their understanding (i.e., knowledge) of SRL (Geduld, 2017;

Peeters et al., 2016; Spruce & Bol, 2015), beliefs about SRL in terms of its usefulness (De Smul et al., 2019b), beliefs about SRL in terms of its suitability for pupils (Peeters et al., 2016; Thomas et al., 2020), or self-efficacy beliefs in promoting SRL (Alvi & Gillies, 2020b; De Smul et al., 2019b; Karlen et al., 2020; Saraç & Tarhan, 2020).

The second section of this literature review documented a scoping review of the literature, conducted on research investigating teachers' understanding of SRL, beliefs about SRL, and pedagogical promotion of pupils' SRL. Previous research has utilised a range of approaches in investigating teachers' perceptions of supporting SRL. This review has discussed how methodological limitations can restrict interpretations, particularly where conclusions are drawn from questionnaire data alone; over half of the studies included in the scoping review of the literature collected only questionnaire data. Whilst questionnaires can be administered economically to large groups (in terms of time and costs; Dignath & Veenman, 2021), research utilising interviews conducted with teachers can provide deeper insight into teachers' thinking (Dignath et al., 2013). Triangulating data from multiple sources provides a more comprehensive portrait of teacher beliefs, knowledge and practice, including differences that emerge among the various measures (Spruce & Bol, 2015). The studies reviewed came from 14 different countries across five continents, with 16 (50%) being from countries in Europe, however research has yet to investigate teachers in the UK.

To the researcher's knowledge, research has yet to investigate teachers' perceptions of supporting SRL in England and Wales, although a recent article in Impact, a UK journal of the Chartered College of Teaching, posited that teachers are not always clear about what metacognition and SRL means or what it looks like in the classroom (Mannion, 2020).

This research therefore aims to investigate teachers' perceptions of supporting SRL (their understanding, beliefs, and pedagogical promotion of SRL) in the context of education settings in England and Wales. Given that it is advisable to have multiple sources of data to triangulate findings (Creswell, 2013), the current research utilises a mixed-methods research design to capture a more holistic representation of teachers' understanding, beliefs, and

promotion of SRL. It is hoped that collecting questionnaire data will provide ‘breadth’, and interview data will provide ‘depth’. This research is innovative since it is the first to investigate teachers’ perceptions of supporting SRL in the context of English and Welsh education settings.

4.2 Research Questions

This study aims to explore the following research questions in a sample of teachers currently teaching in England and Wales:

1. What do teachers understand by the term SRL?

2. What are teachers’ beliefs about SRL?

3. How do teachers support pupils’ SRL?

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Teachers' Perceptions of Supporting Self-Regulated Learning

Part 2: Major Research Journal Article

Word Count: 9,608
(13,066 including figures and tables)

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2022

1. Abstract

Panadero (2017) asserted that as an umbrella term under which a considerable number of variables that influence learning are considered, self-regulated learning (SRL) provides a holistic approach and represents one of the most important areas of research within educational psychology. Research has demonstrated the impact of the effective teaching and use of SRL strategies on pupils' achievement (e.g., Hattie, 2009) and the crucial role teachers play in children's SRL development (e.g., Dignath & Büttner, 2008; Stoeger et al., 2014). However, evidence-based practice is at risk of reductionism: features and contexts are important (Cline et al., 2015). With regards to SRL-supportive approaches specifically, it has been highlighted that these should be investigated and contextualised in relation to teachers' understanding, beliefs and practices, yet are seldom explored in research (e.g., Alvi & Gillies, 2020a, 2020b; Spruce & Bol, 2015).

This research investigated teachers' perceptions of supporting SRL in education settings in England and Wales. There were three research questions: (1) What do teachers understand by the term SRL? (2) What are teachers' beliefs about SRL? (3) How do teachers support pupils' SRL?

98 teachers completed an online survey, and five teachers took part in semi-structured interviews. The teachers taught in nursery, primary and / or secondary schools in England or Wales. Descriptive statistics and domain summaries were used to analyse survey data, and Reflexive Thematic Analysis (Braun & Clarke, 2022) was used to analyse interview data.

Whilst some teachers held misconceptions regarding SRL, the majority of the teachers in this sample had some understanding of SRL and its different components, despite few having received training in this area. Teachers were also found to hold positive beliefs about SRL in terms of its importance, benefits, and suitability for their pupils. Teachers identified both within-child and systemic factors which may facilitate or impede

their ability to promote SRL in practice. Teachers also provided a range of examples as to how they support their pupils' SRL skills.

The findings are discussed in relation to previous research and the wider context, including implications for Educational Psychologists. Strengths and limitations of the research are addressed, and suggestions for future research are proposed.

2. Summary of the Literature

Self-regulated learning (SRL) can be defined as the ability to plan, monitor, and evaluate learning (Zimmerman, 2002) and comprises the cognitive, metacognitive, behavioural, motivational, and emotional / affective aspects of learning (Panadero, 2017). SRL has been conceptualised as being the application of metacognition (monitoring and controlling your thought processes) and self-regulation (monitoring and controlling your emotions and behaviours) to learning (Mannion, 2020). Panadero (2017) asserted that as an umbrella term under which a considerable number of variables that influence learning are considered, SRL provides a holistic approach and has therefore "become one of the most important areas of research within educational psychology" (p. 1).

The Organisation for Economic Co-operation and Development (2014) posited that one of the most important goals in contemporary education is to support pupils' development as self-regulated learners. The field of SRL is growing in tandem with learners in the emerging information-age paradigm of education (Huh & Reigeluth, 2018); in today's 21st century society, the creation of knowledge increases exponentially (De Smul et al., 2019a) and educational and economic conditions shift and change rapidly (Vassalo, 2013). Therefore, pupils' abilities to respond flexibly and creatively to various changing contexts (James et al., 2007) and be more active learners with more control over their learning process (McCombs & Whisler, 1997; Reigeluth & Karnopp, 2013; Reigeluth et al., 2008) is of utter importance and requires the ability to innovate, problem-solve, self-direct, work with others, and adapt – conditions that require and are aligned with SRL (Wolters, 2010; Zimmerman, 2002).

The Curriculum for Wales (Welsh Government, 2020) references both metacognition and self-regulation. It could be argued that current educational policy and guidance in England and Wales supports pedagogical practices aimed at the development of pupils' capabilities for SRL (e.g., see the Education Endowment Foundation's [EEF], 2018 guidance report titled *Metacognition and Self-Regulated Learning*). Whilst there is no explicit reference

to SRL in the English and Welsh National Curriculums, several principles on which the curriculums are based point to the provision of learning environments that enable the development of SRL skills.

In recent years, evidence-informed approaches to teaching and learning in schools have been increasingly promoted through national educational policy and guidance (e.g., Department for Education, 2016; Donaldson, 2015; Sutton Trust-EEF, 2021; Institute for Effective Education, 2019). Major reviews of the literature (e.g., Bjork et al., 2013; Dunlosky et al., 2013; Greene et al., 2015; MacArthur, 2012; Morehead et al., 2016; Schunk & Greene, 2018; Winne, 2018), meta-analyses (e.g., Dent & Koenka, 2016; Sutton Trust-EEF, 2021; Hattie, 2009; Sitzman & Ely, 2011), and cross-national comparative research (e.g., Perry et al., 2015) have demonstrated the impact of the effective teaching and use of SRL strategies on pupils' achievement. However, evidence-based practice is at risk of reductionism: features and contexts are important, and there may be a focus on outcomes at the expense of insights into the mechanisms involved in the processes of change (Cline et al., 2015). In educational contexts, the linking of input variables to outcome variables is complex (Cartwright et al., 2009), particularly due to the social processes involved in supporting pupils (Gulliford, 2015). Petticrew et al. (2013) highlighted that research has an important role to play in 'learning about' an intervention, as much as about the effects of the intervention itself. It could be argued that this is also relevant when considering teaching approaches (i.e., promoting SRL). Researchers have emphasised the need for research to illustrate the differences in teachers' SRL promotion by identifying contextual variables and influences (Creemers & Kyriakides, 2006; Muijs et al., 2014; Peeters et al., 2016). Educational research should take into account teacher beliefs because of the way these can inform classroom practice (Pajares, 1992). With regards to SRL-supportive approaches specifically, it has been highlighted that these should be investigated and contextualised in relation to teachers' beliefs and practices, yet are seldom explored in research (e.g., Alvi & Gillies, 2020b).

Research has demonstrated the crucial role teachers play in children's SRL development (Boekaerts 1997; Dignath & Büttner, 2008; Moos & Ringdal, 2012; Perels et al., 2014), however differences between teachers' promotion of SRL can be attributed to differences in their understanding (i.e., knowledge) of SRL (Geduld, 2017; Peeters et al., 2016; Spruce & Bol, 2015), beliefs about SRL in terms of its usefulness (De Smul et al., 2019b), beliefs about SRL in terms of its suitability for pupils (Peeters et al., 2016; Thomas et al., 2020), or self-efficacy beliefs in promoting SRL (Alvi & Gillies, 2020b; De Smul et al., 2019b; Karlen et al., 2020; Saraç & Tarhan, 2020). As scientist-practitioners (Cline et al., 2015) who work closely with education setting staff and are knowledgeable about the education system (Association of Educational Psychologists [AEP], 2021), Educational Psychologists (EPs) appear well placed to investigate teachers' perceptions of supporting SRL.

Research investigating teachers' perceptions of supporting SRL has been conducted across the globe, however to the researcher's knowledge, research has yet to investigate teachers' perceptions of supporting SRL in England and Wales. Previous research has utilised a range of approaches to investigate teachers' perceptions of supporting SRL. Methodological limitations can restrict interpretations, particularly where conclusions are drawn from questionnaire data alone. As highlighted by Dignath et al. (2013), most of the research exploring teachers' promotion of SRL has been based on teacher questionnaires. Whilst questionnaires can be administered economically to large groups (in terms of time and costs [Dignath & Veenman, 2021]), research utilising interviews conducted with teachers can provide deeper insight into teachers' thinking (Dignath et al., 2013). Triangulating data from multiple sources provides a more comprehensive portrait of teacher beliefs, knowledge and practice, including differences that emerge among the various measures (Spruce & Bol, 2015).

2.1 Current Research

A social cognitive theoretical perspective (widely recognised as the most prevalent and comprehensive approach [Huh & Reigeluth, 2018; Schunk, 2001; Zimmerman, 1998, 2000]) stressing the importance of modelling and social learning is adopted in the current research. This research is innovative since it is the first to investigate teachers' perceptions of supporting SRL in the context of England and Wales. Given that it is advisable to have multiple sources of data to triangulate findings (Creswell, 2013), the current research utilised a mixed-methods research design to capture a more holistic representation of teachers' understanding, beliefs, and promotion of SRL. It was hoped that the collection of questionnaire data provided 'breadth', and interview data provided 'depth'.

2.2 Research Questions

This study aimed to explore the following research questions:

1. What do teachers understand by the term SRL?
2. What are teachers' beliefs about SRL?
3. How do teachers support pupils' SRL?

3. Methodology

3.1 Ontology and Epistemology

Critical realism embodying a constructivist epistemology (the philosophical study of the nature, origin, and limits of human knowledge) was adopted in the current research, i.e., the world is constructed through our individual standpoints and perceptions (Creswell et al., 2011). However, this is contextualised within the traditional realist ontology (the philosophical study of being) where reality can exist outside of perception (Maxwell & Mittapalli, 2010). Therefore, whilst the discourses available to us mediate our knowledge of the world (and there may be multiple perspectives on a single event or object [Healy & Perry, 2000]), we can get empirical feedback from those aspects of the world that are accessible (Sayer, 2004).

Critical realism offers an alternative philosophical perspective to the established paradigms of positivism and interpretivism (Houston, 2001; McEvoy and Richards, 2003). Critical realism was adopted in recognition of the subjective nature of the contributions given, as teachers were making sense of their own experiences and therefore reporting events through the 'lens' of their own worldview.

3.2 Design

Critical realism argues that the choice of methods used should be dictated by the nature of the research problem (McEvoy & Richards, 2006), and the most effective approach will invariably be to use a combination of quantitative and qualitative methods or techniques (Olsen, 2002).

This study followed a mixed-methods design in which qualitative and quantitative measures were combined to investigate teachers' understanding, beliefs, and support of pupils' SRL. A survey collected qualitative and quantitative data, whilst interviews were conducted to collect qualitative data only. Methodological triangulation was employed in the current research for the purposes of confirmation and completeness (Risjord et al., 2001,

2002). Triangulation for the purpose of confirmation refers to how quantitative and qualitative findings may corroborate each other and support more robust conclusions than either source of data could support alone (Risjord et al., 2001). Meanwhile, triangulation for the purpose of completeness refers to how quantitative and qualitative findings together enable a greater level of detail than could be obtained from using either data source (McEvoy & Richards, 2006).

3.3 Participants

3.3.1 Recruitment Methods

This research used a combination of convenience and snowball techniques. The research procedure, including details of how participants were recruited and when interviews took place, is outlined in Figure 3.

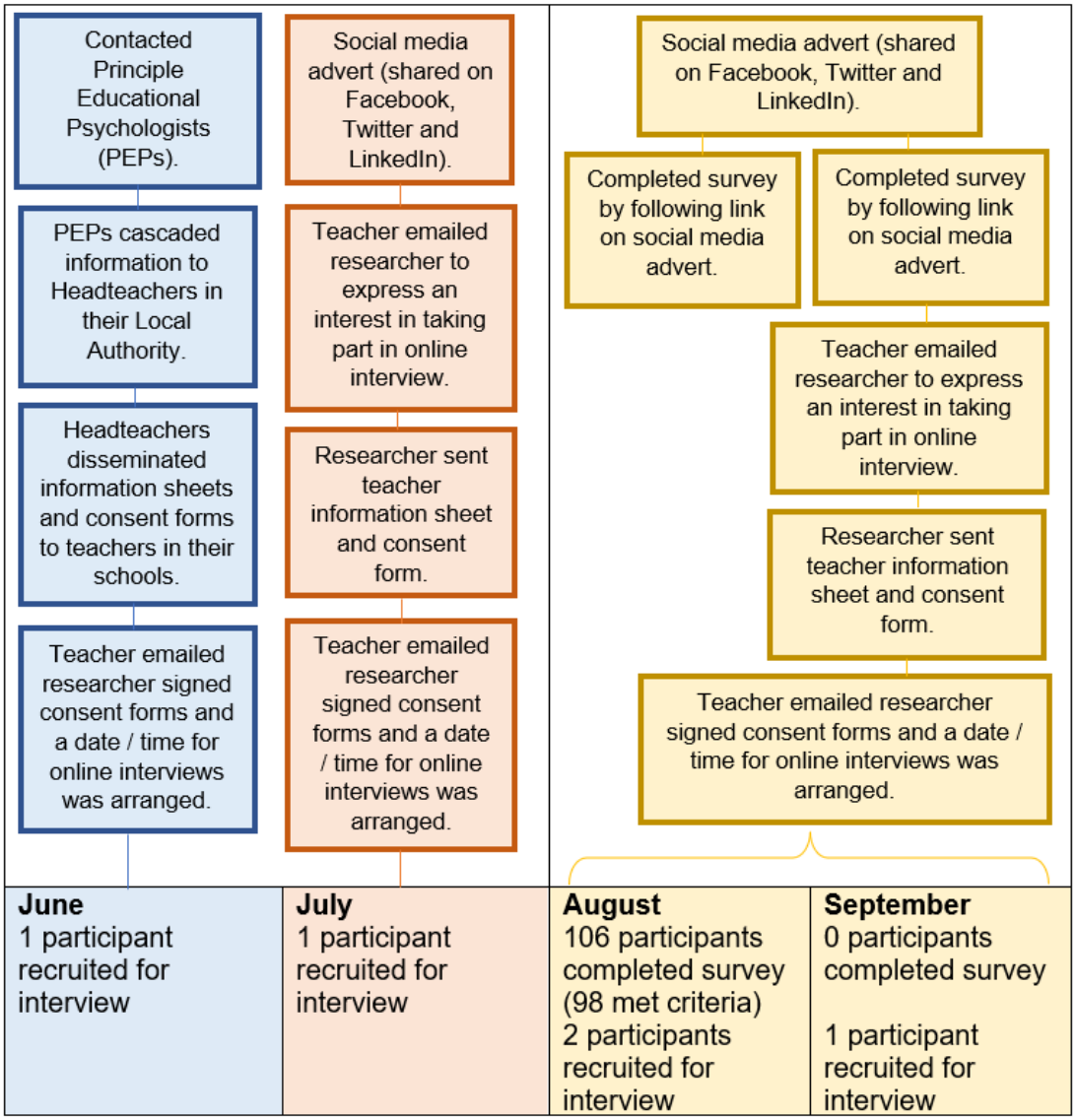
Between June and August 2021, participants were recruited for interviews via social media (Facebook, Twitter and LinkedIn; see Appendix 5 for social media advert) and by contacting Principal Educational Psychologists (see gatekeeper letter [Appendix 6]) to ask them to cascade information to headteachers (see gatekeeper letter [Appendix 7]) to disseminate information about the research to teachers in their schools (see participant information sheet [Appendix 8]). This resulted in two participants returning consent forms (Appendix 9) to the researcher via email and taking part in online interviews following agreement of a suitable time and date.

Between August and September 2021, participants were recruited for interviews and survey completion via social media only (see Appendix 10 for social media advert). To complete the survey, participants followed a link. To participate in interviews, participants emailed the researcher (the researcher's email was shared at the end of the survey) to express interest and were then sent information sheets (Appendix 11) and consent forms

(Appendix 12). When participants returned consent forms a date and time for an online interview was arranged.

Figure 3

Research Procedure



Participants were recruited on a ‘first come first served’ basis until the required amount of interest was received. Participation was voluntary and teachers received no incentives for participating.

In line with previous research (e.g., Dignath & Büttner, 2018), teachers who volunteered to participate were assumed to be particularly interested in the study or the topic of SRL.

3.3.2 Demographic Information

Participants were qualified teachers currently teaching in a school in the UK. There were no additional specific inclusion or exclusion criteria, however only teachers from schools in England and Wales volunteered to participate. 98 teachers completed the survey, and 5 teachers took part in semi-structured interviews. Tables 6 and 7 present demographic information regarding survey and interview participants, respectively. See Appendix 13 for full demographic information of survey participants, including subjects taught. It is acknowledged that the diversity of the sample (in terms of participants' years of teaching experience and age of pupils taught) reduces the specificity and generalisability of findings.

Table 6

Demographic Information (Survey Participants)

						Total
Years' teaching experience	**Less than 1**	**2-4**	**5-9**	**10-19**	**20+**	
	7	18	30	23	20	98
Age of pupils taught	**Nursery**		**Primary school**		**Secondary school**	
	7		49		55	111
Location	**England**			**Wales**		
	76			22		98

Table 7

Demographic Information (Interview Participants)

	Years' teaching experience	Age of pupils taught	Location	Additional information (if not only teaching mainstream)
Participant 1	5	Secondary school	Wales	Also teaches in the school's Specialist Resource Base
Participant 2	15	Secondary school	England	Also an Assistant Headteacher and Head of Sixth Form
Participant 3	5	Primary School	Wales	
Participant 4	4	Primary School	Wales	
Participant 5	30	Foundation Phase	Wales	Teaches in a Specialist Teaching Facility

3.4 Instruments and Procedure

Because critical realism acknowledges that there are realities that cannot not be known (Guba, 1990) as reality can exist outside of perception (Maxwell & Mittapalli, 2010), it posits that theories are only able to provide impartial representations of reality (Shannon-Baker, 2015). Furthermore, the complex nature of educational problems requires a variety of complementary theoretical perspectives to develop a deep understanding of the process (Alvi & Gillies, 2021; Geelan, 2006). In line with the aforementioned points, no single theory was used to construct the instruments in this research (see below). Therefore, many theories, models, and instruments from the literature were used to capture different representations of reality. The following sections detail the instruments utilised in the current research.

3.4.1 Survey

The survey instrument (see Appendix 14) was developed based on the literature review (see Appendix 15 for the rationale and associated literature justifying each question). There was a total of 16 questions in the survey, including four questions to gather demographic information. Four questions explored teachers' understanding of the term SRL (research question 1), for example "Please write a brief definition about what self-regulated learning means to you". Seven questions intended to measure teachers' beliefs regarding SRL (research question 2), for example "Do you think all pupils can learn to self-regulate their learning?". One question aimed to explore how teachers may support pupils' SRL (research question 3) "Which teacher behaviours are important when supporting pupils' self-regulated learning?". The survey was constructed in and hosted by the online survey system provider Qualtrics^{XM}.

3.4.2 Semi-structured Interview

The semi-structured interview schedule (Appendix 16) was developed based on the literature review (see Appendix 17 for the rationale and associated literature justifying each question) and contained eight open-ended questions with prompts.

The interviews took place via Zoom or Microsoft Teams (depending on participants' preference). Before beginning the interview, participants received information about the research (Appendices 8 & 11) and provided written (Appendices 9 & 12) and verbal informed consent. Participants were reminded of their right to withdraw. Interviews lasted for approximately 30-45 minutes each. Participants were debriefed verbally at the end of the interview and in writing (see Appendices 18 & 19).

3.5 Ethical Considerations

Ethical approval was granted by Cardiff University School of Psychology Ethics Committee. A summary of the key ethical considerations and how they were addressed is presented in Appendix 20.

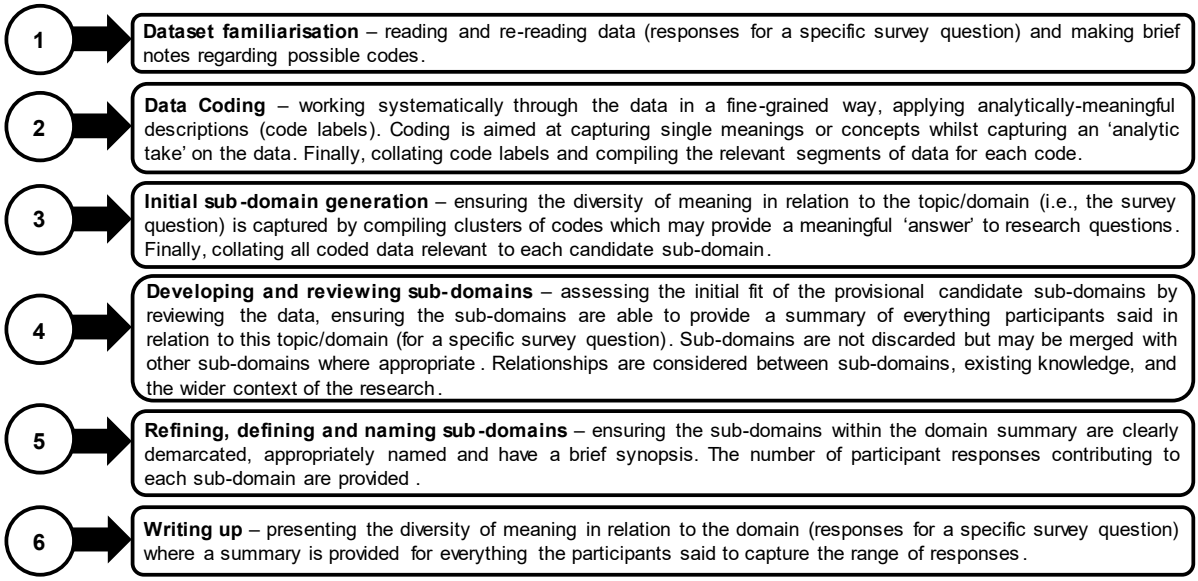
3.6 Data Analysis

3.6.1 Survey Data

Qualitative and quantitative data were collected from online questionnaires via Qualtrics^{XM}. Quantitative data was used for descriptive statistics. Qualitative data obtained from the five open-ended questions was used to produce domain summaries related to each question. Braun and Clarke (2019) distinguished between *domain summaries* and *themes*. Domain summaries (also referred to as topic summaries) are organised around a shared topic, but not shared meaning; they aim to capture the diversity of meaning in relation to a topic or area of focus (Braun & Clarke, 2019). Domain summaries provide a summary of everything the participants said in relation to a particular topic or interview question and capture the range of responses (Braun & Clarke, 2022). Inductive (data-driven) and deductive (researcher / theory-driven) analyses and explorations of responses at the semantic (participant-driven, descriptive) and latent (research-driven, conceptual) levels was adopted when creating domain summaries. See Figure 4 for the steps taken in creating domain summaries and see Appendix 21 for further information regarding this process.

Figure 4

Six-Step (Recursive) Process to Creating Each Domain Summary, Adapted from Braun and Clarke (2022)



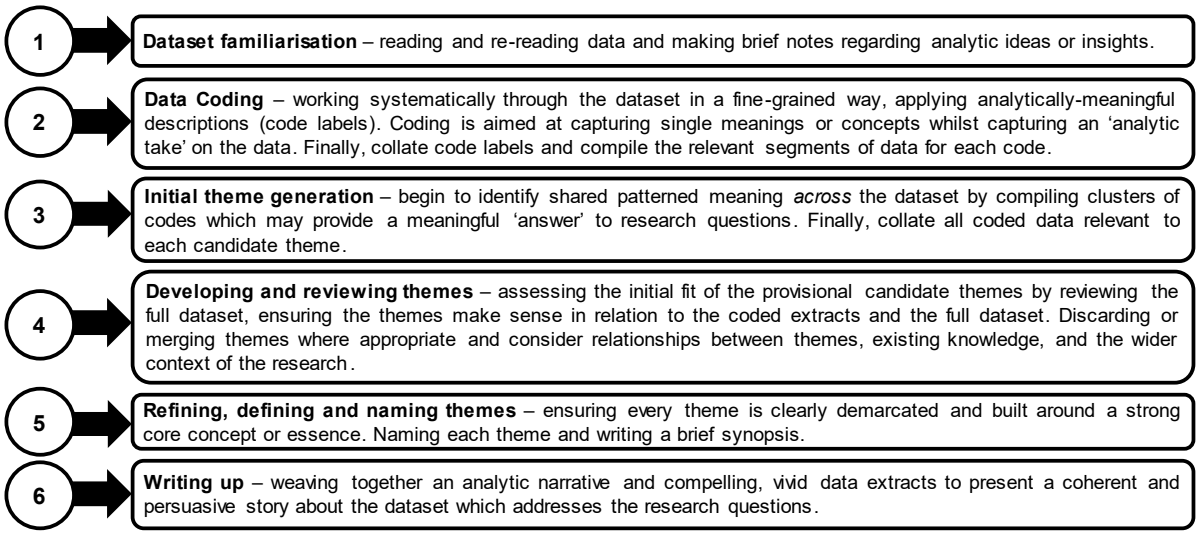
3.6.2 Interview Data

Qualitative data from the interviews were transcribed using Braun and Clarke's (2013) orthographic transcription system (Appendix 22) and analysed using Reflexive Thematic Analysis (Braun & Clarke, 2022) via a six-step (recursive) process (see Figure 5). Inductive (data-driven) and deductive (researcher / theory-driven) analyses and explorations of responses at the semantic (participant-driven, descriptive) and latent (research-driven, conceptual) levels was adopted. Braun and Clarke (2022) assert that using Reflective Thematic Analysis from a critical realist position means that data is viewed as allowing access to a mediated reflection of reality, and the goal is to provide a coherent and compelling interpretation of the data. Given that Reflexive Thematic Analysis assumes a flexible and theoretically driven interpretation of the data, as guided by the underlying philosophical positioning of the researcher (Braun & Clarke, 2022), it is acknowledged that a

different researcher may have developed different themes and come to different conclusions. See Appendix 23 for further information regarding this process.

Figure 5

Six-Step (Recursive) Process to Thematic Analysis, Adapted from Braun and Clarke (2022)

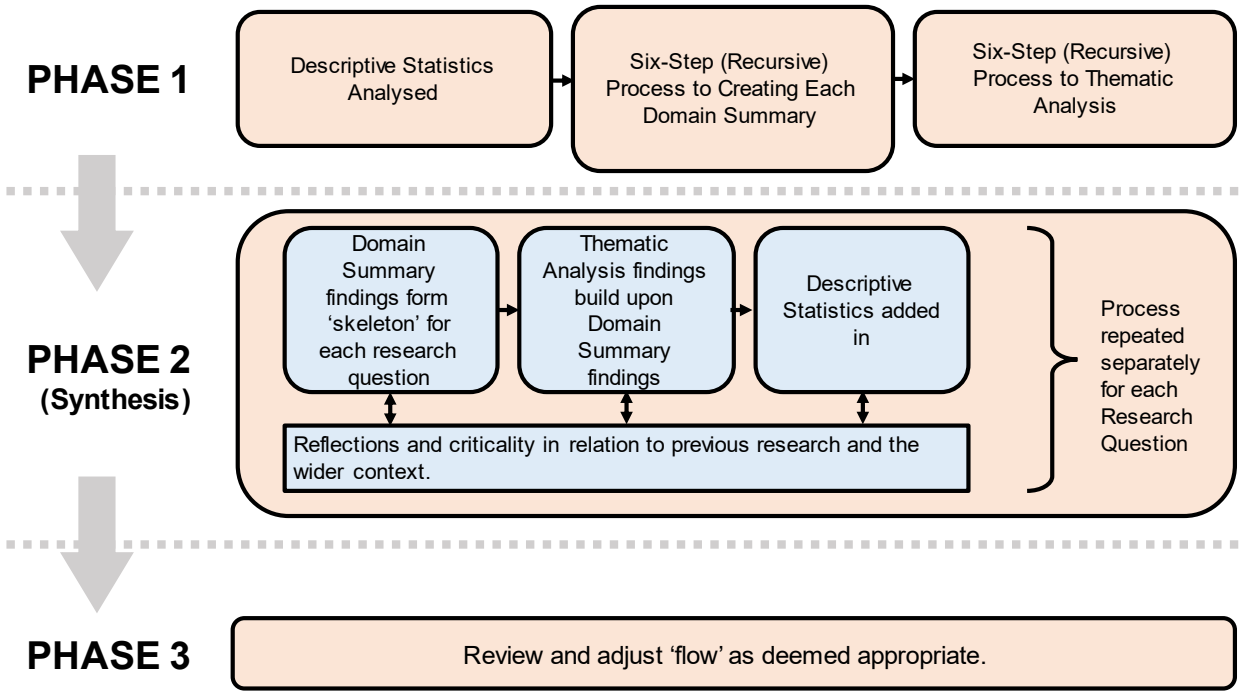


3.6.2 Synthesis of the Data Sets

Figure 6 describes how the data sets were synthesised. Once 'individual' data sets were analysed and finalised (i.e., descriptive statistics, domain summaries, and themes), these were synthesised separately for each of the three research questions.

Figure 6

Synthesis of the Data Sets



4. Results

4.1 Descriptive Statistics

Descriptive statistics collected from questionnaire data are summarised in Figures 7-11 and in Tables 8-11.

Figure 7

Responses to Survey Question "How familiar are you with the term 'self-regulated learning'?" (N = 98)

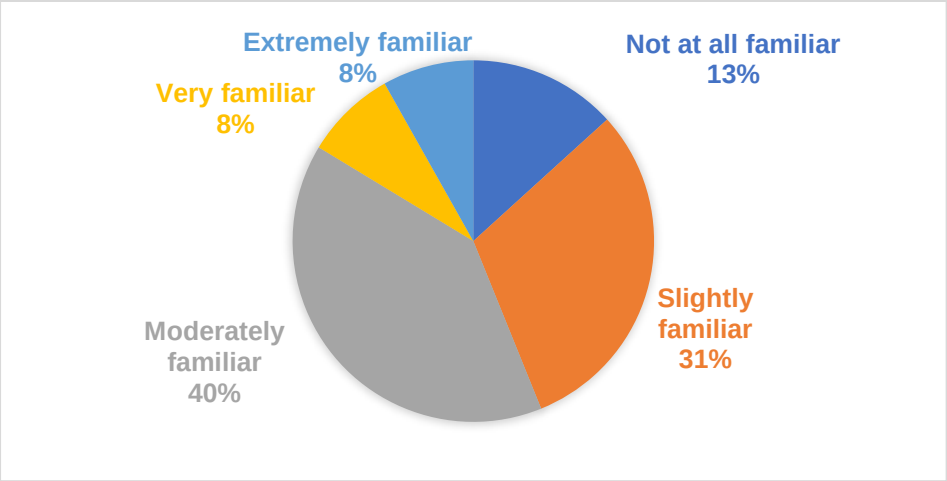


Figure 7 summarises participants' self-rated familiarity with the term SRL. The vast majority of participants (71%) were either slightly or moderately familiar with the term. Only a small proportion (16%) were either very or extremely familiar with the term, and only 13% felt that they were not at all familiar with the term.

Figures 8 and 9 summarise participants' perceived importance of SRL for their pupils' learning, and their perceived importance of teaching SRL, respectively. The vast majority of participants (79.59%) rated SRL skills for their pupils, and teaching SRL skills in addition to content knowledge, as being either very or extremely important. Very few participants (4.08%) rated these as being not at all important or slightly important. The remainder of participants (16.33%) rated these as being moderately important.

Figure 8

Responses to Survey Question "How important are self-regulated learning skills for your pupils' learning?"

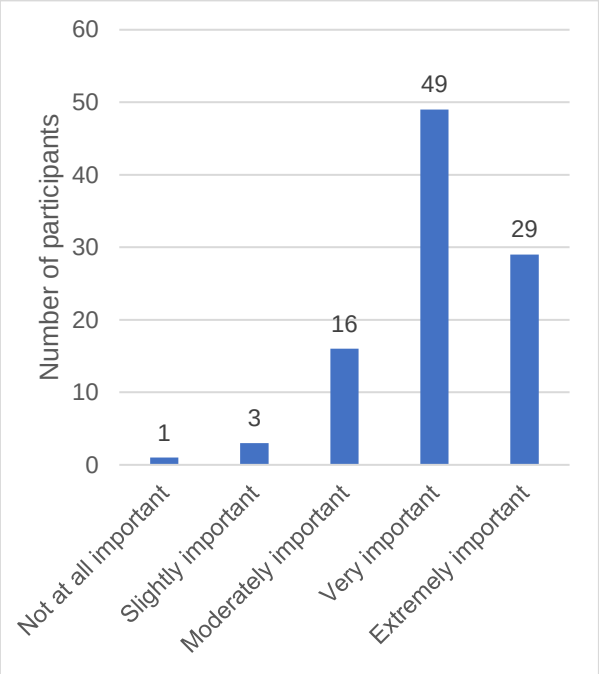
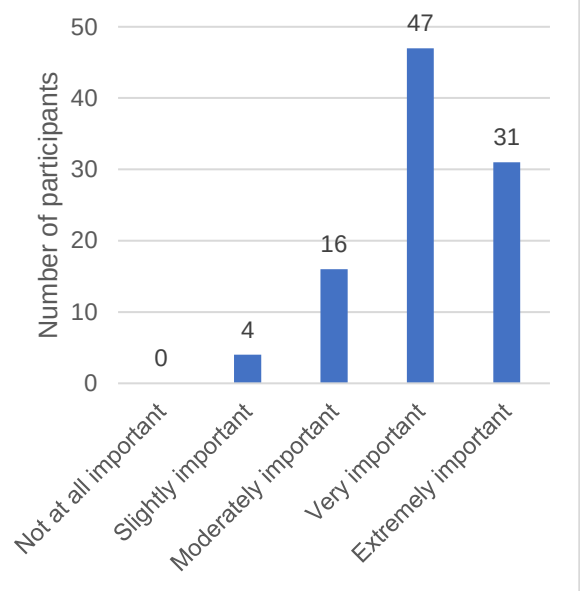


Figure 9

Responses to Survey Question "How important is it for teachers to teach their pupils self-regulated learning skills in addition to content knowledge?"



As can be seen from Figure 10, almost three quarters of participants reported to believe that all pupils can learn to self-regulate their learning.

Figure 11 represents the number of participants in this sample who have received training on SRL: over three quarters of participants had not received any.

Figure 10

Responses to Survey Question "Do you think all pupils can learn to self-regulate their learning?"

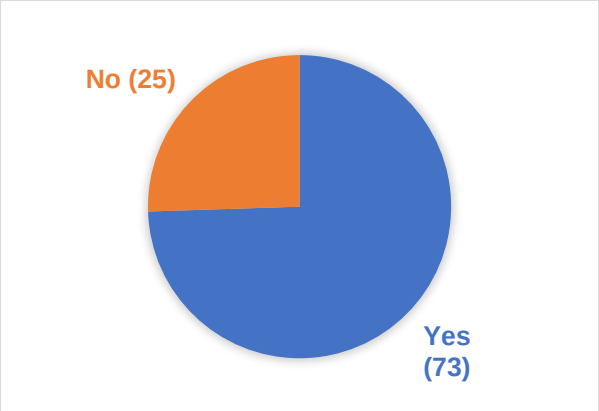


Figure 11

Responses to Survey Question "Have you received any training on self-regulated learning?

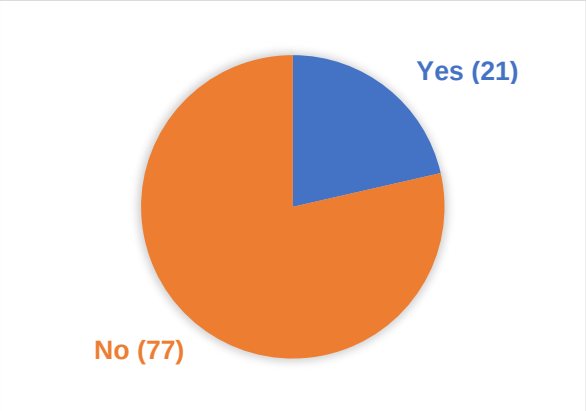


Table 8 summarises the ratings participants gave for different definitions of SRL. Zimmerman's (2002) definition of SRL received a higher mean score than did Usher and Schunk's (2018). Thus, on average, Zimmerman's (2002) definition aligned more with participants' views about what SRL is.

Table 8

Responses to Survey Question "On a scale of 1 to 5, how much do the following definitions align with your own views about what self-regulated learning is? (1 = does not align with my views, 5 = completely aligns with my views)"

Definition	Mean Score	Standard Deviation	Number of Responses
Self-regulated learning is the process of systematically organising one's thoughts, feelings and actions to attain one's goals.	3.76	0.88	97
Self-regulated learning is the ability to plan, monitor, and evaluate learning.	4.18	0.82	96

Table 9 summarises the ratings participants gave regarding the extent to which they agreed with different statements about SRL. *Pupils have the capacity to determine what they want to learn* received the lowest average rating (i.e., participants on average agreed with this statement to a lesser extent). *Each pupil should be given the opportunity to regulate their own learning* received the highest average rating (i.e., participants on average agreed with this statement to a greater extent).

Table 9

Ratings of Statements on a scale of 1 to 5 (where 1 = strongly disagree and 5 = strongly agree)

Statement	Mean	Standard Deviation	Number of responses
Pupils should be able to make decisions about the sequence and duration of their learning activities more often.	3.49	1.03	95
Pupils have the capacity to determine what they want to learn.	3.3	0.99	96
Each pupil should be given the opportunity to regulate their own learning.	4.01	0.84	95
Self-regulated learning is practicable in primary education.	3.61	1.05	90
Self-regulated learning provides pupils with a more thorough preparation for their transition to secondary education.	3.82	1.03	91

Table 10 outlines participants' reported confidence in promoting pupils' SRL on a scale of 1 to 5 (where 1 = *not confident at all*, and 5 = *extremely confident*). Two thirds of participants rated 3 or 4 on this question, very few rated 5 (10.42%), with even fewer rating 1 (4.17%).

Table 11 summarises participants' perceived importance of different teacher behaviours in promoting SRL. All teacher behaviours presented were rated as 'important' by at least 74.39% of participants. The teacher behaviour which received the most ratings as being 'not important' was *describing SRL to pupils*, followed by *encouraging pupils to track their progress through a learning task*. The teacher behaviour rated as 'important' by the most participants was *enhancing pupils' self-motivational beliefs.*

Table 10

Responses to Survey Question "On a scale of 1 to 5, how confident do you feel in your ability to promote pupils' self-regulated learning?"

Scale Rating	Number of responses
1 (not confident at all)	4
2	18
3	26
4	38
5 (extremely confident)	10
Total	96

Table 11:

Perceived importance of different teacher behaviours

Teacher behaviours	Describing SRL to pupils	Encouraging pupils to monitor their learning process	Encouraging pupils to use goal setting when planning for a learning task	Encouraging pupils to reflect on and evaluate after a learning task	Encouraging pupils to track their progress through a learning task	Enhancing pupils' self-motivational beliefs
Rated *'important'*	61 (74.39%)	74 (92.50%)	75 (92.59%)	79 (94.05%)	71 (88.75%)	78 (95.12%)
Rated *'not important'*	21 (25.61%)	6 (7.50%)	6 (7.41%)	5 (5.95%)	9 (11.25%)	4 (4.88%)
Total number of Responses	82	80	81	84	80	82

4.2 Domain Summaries

A domain summary was formulated for each open-ended question of the survey. The number of responses for each domain summary is presented in Table 12. The domain summaries are presented visually in Figures 12-17 below, and a short description of each is provided. See Appendix 21 for further example extracts for corresponding sub-domains of each domain summary.

Table 13

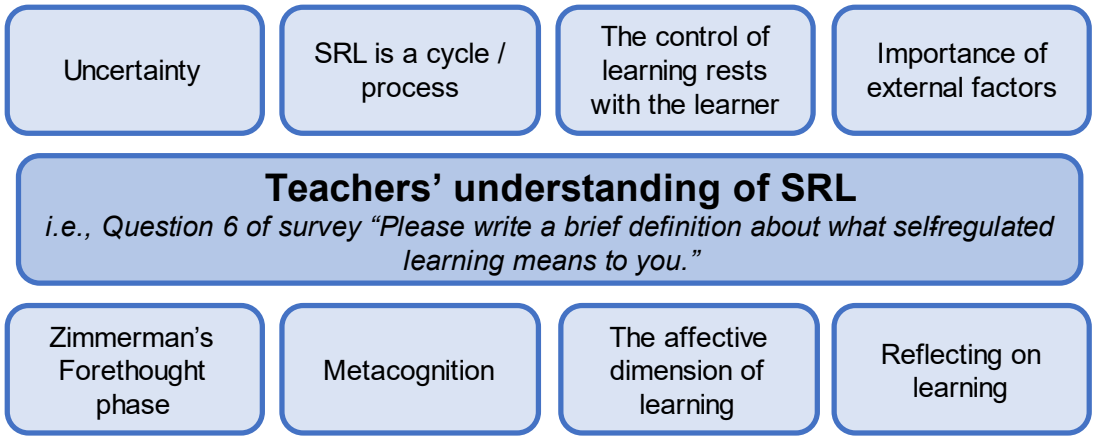
Number of Respondents for each Domain Summary

Survey Question	Domain Summary	Number of Respondents
6	Teachers' understanding of SRL	90
7	Nature of Training Received	20
11	Reasons not all pupils can learn to self-regulate their learning	24
11	Reasons all pupils can learn to self-regulate their learning	66
14	Increasing teachers' confidence in this area	84
15	Perceived facilitators to supporting SRL	85

4.2.1 Teachers' Understanding of SRL

Figure 12

Domain Summary for Survey Question 6



The sub-domain *Uncertainty* was formulated from the responses of 9 participants (10%) who suggested they did not know what SRL meant. These responses ranged from simply stating "unsure", to participants appearing to guess an answer, e.g., "Not at all familiar - would imagine it's to do with…" or "I haven't heard of it before, but I would guess that it could be do to with…".

The responses of 13 participants (14.4%) contributed to the sub-domain *SRL is a cycle / process*. Responses in this sub-domain included "…The process is cyclical and can be repeated…" and "A cyclical process whereby…".

The control of learning rests with the learner was a sub-domain composed of the responses of 28 participants (31.1%). Examples of responses included "Child being able to take control or responsibility for their learning" and "Having ownership over the learning process". Many participants appeared to construct SRL as being synonymous with

independent or self-directed learning, for example “Children getting on with work, dealing with any issues themselves” and “Learning that is done independently…”.

The sub-domain *Zimmerman’s Forethought phase* was made up of the responses of 31 participants (34.4%). Here, participants described the components of the Forethought Phase (Zimmerman, 2000) such as pupils analysing the task, setting goals, and planning how to reach them. For example, “… a process children go through of planning and setting goals / targets…”.

Metacognition was another sub-domain formulated. Whilst the term ‘metacognition’ was only explicitly stated by four participants, there were 46 examples (across 29 participants [32.2%]) found where participants used terms which were synonymous with, or related to metacognition (e.g., monitoring; *N* = 13) or metacognitive strategies (e.g., adapting; *N* = 4). For example, “…carrying out the activity and evaluating and changing as they go…” and “Employing metacognition to select the best course of action on a given task, and be prepared to diversify approaches to achieve desired outcomes”.

The responses of 16 participants (17.8%) contributed to the sub-domain *The affective dimension of learning*. Here participants described the importance of emotion regulation and motivation in the learning process. For example, “Able to cope with the challenges faced in learning and showing resilience to persevere when it is tricky and confident to attempt the learning tasks or learning experience” and “Child using his own motivation to develop skills…”.

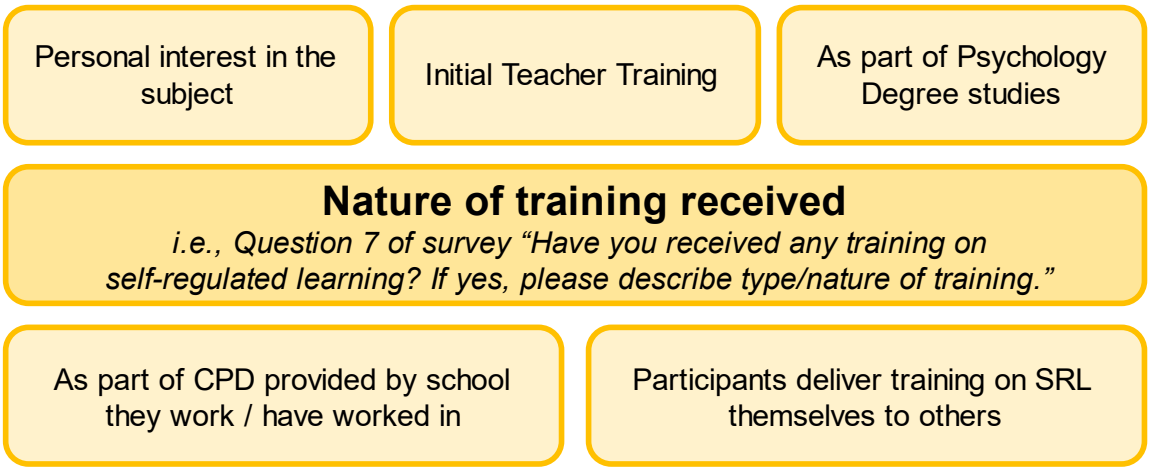
The sub-domain *Reflecting on learning* was composed of the responses of 38 participants (42.2%). Participants described how reflecting / reviewing / evaluating their learning is an integral component of SRL. Of these, 15 participants related this reflection to pupils therefore being able to improve future learning as a result. For example, “… to be able to reflect on their own learning in the context of what has been taught in lessons therefore moving their learning on themselves…”.

Importance of external factors was the final sub-domain for this area, and eight participants (8.8%) referred to the significance of an adult and / or environmental features in SRL. For example, "… use resources in the environment to facilitate task…" and "… self-regulated learning could involve others and teachers providing support and scaffolding…".

4.2.2 Nature of Training Received

Figure 13

Domain Summary for Survey Question 7

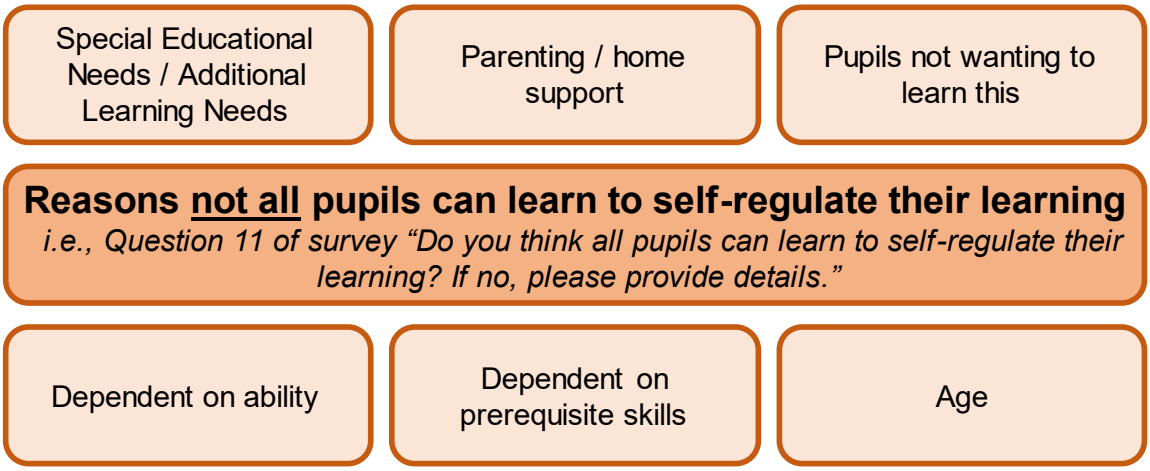


Seven participants had researched SRL due to their *interest in this area*. Only three participants had received training on SRL during their *Initial Teacher Training*, and eight participants had received this training *as part of Continuous Professional Development* (CPD) *provided by school they work / have worked in* (e.g., INSET days and twilight sessions). Two participants had received training on SRL during their Psychology degrees and three participants had *delivered training on SRL themselves, to other school staff.*

4.2.3 Reasons Not All Pupils Can Learn to Self-Regulate Their Learning

Figure 14

Domain Summary for Survey Question 11a



Ten participants felt that *Special Educational Needs / Additional Learning Needs* (ALN) may impede some pupils' ability to learn SRL skills. Examples of responses for this sub-domain included "Some pupils will always need adult support… This might be due to SEMH needs or SEND" and "…Very few will have cognitive disabilities which make self-regulation impossible".

Four participants asserted that *Parenting / home support* can impact on whether pupils are able to develop their SRL, for example, "Many pupils lack any basics understanding of the responsibility to complete work themselves. This is often reinforced by parents…" and "…Also dependent on home support student receives…".

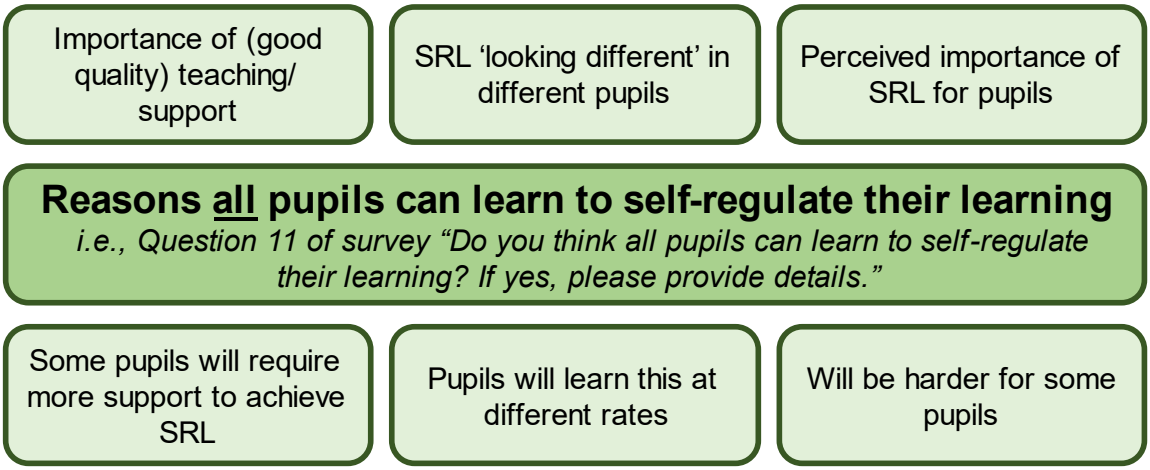
Two participants posited that some pupils would not be able to self-regulate their learning due to their *ability*. One teacher suggested that there are *prerequisite skills needed*

in order to develop SRL capacities (literacy and numeracy), and one teacher suggested that some pupils may not be capable of SRL due to their *age*.

4.2.4 Reasons All Pupils Can Learn to Self-Regulate Their Learning

Figure 15

Domain Summary for Survey Question 11b



Importance of (good quality) teaching / support was a sub-domain composed of the responses of 22 participants. Here, references were made to the importance of support from others (usually teachers) to develop SRL. For example, "With effective teaching and modelling across all subjects…" and "Given the right tools and taught in multiple different way dependent on the child's learning style".

The sub-domain *SRL 'looking different' in different pupils* was formulated based on the responses of 17 participants. Here, it was asserted that developmental stages and individual differences means that pupils will be able to demonstrate SRL in different ways or to varying degrees. For example, "…It might not look the same for every student as ability

and previous learning will play a role in it as well" and "Life skill. Like communication. Huge variation in how it's done but always there to be nurtured".

Eight participants shared their *perceptions of how important SRL is to pupils*, for example "This is the only solution to a blanket 'I don't get it!'" , "…It is essential to develop strategies to be a life-long learner" and "I teach in a specialist teaching facility… They can all manage it to some degree… It can be done though and builds their confidence in themselves and their ability".

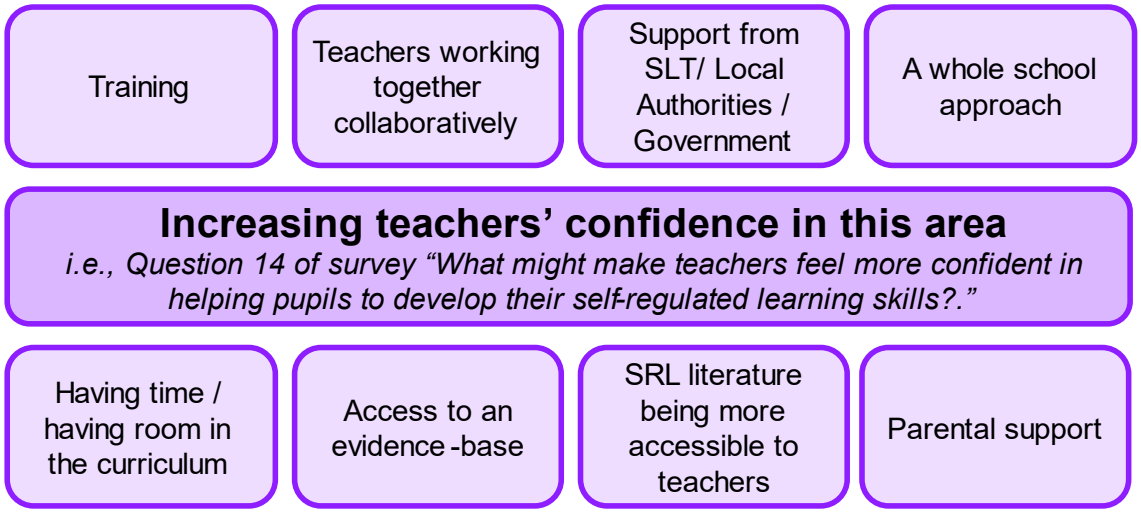
It was noted by five participants that *some pupils will require more support to achieve SRL*, and it was noted by six participants that *learning SRL skills will be harder for some pupils*, for example, "To an extent and those more able and who are more greatly supported at home are more likely to be able to do this".

The responses of eight participants contributed to the sub-domain *Pupils will learn this at different rates*. Here, it was acknowledged that learning SRL skills take time, and that *some pupils will require more time to develop in this area*. For example, "…I also think it's important to consider that this process of learning can take years - even as adults it can be tricky to motivate and focus at all times" and "Children develop at different rates and some children may take longer to get there…".

4.2.5 Increasing Teachers' Confidence in This Area

Figure 16

Domain Summary for Survey Question 14



Training was a sub-domain composed of the responses of 50 participants (59.5%). These participants stated that high quality training (for example including practical ideas, subject-specific guidance, resources, and case studies) would make teachers feel more confident in helping pupils to develop their SRL skills.

The responses of 11 participants (13.1%) formulated the sub-domain *Teachers working together collaboratively*. Here, participants described how peer support, sharing examples of good practice and shadowing would increase teachers' confidence to support their pupils' SRL development. For example, "Working as teams or AOLEs to implement and evaluate ways to encourage self-regulated learning would improve confidence. Sharing experiences across the school and between schools after trialling. Working as a team to encourage it across key stages."

The sub-domain *Support from Senior Leadership Teams (SLT) / Local Authorities / Government* was composed of the responses of 17 participants (20.2%). These participants described how support from wider systems may increase their confidence in this area, for example, "… Less pressure from leaders of schools to implement blanket policies towards teaching methods… Updated subject curriculums that reflect our current society and the needs of the learning and working environment today".

Having time / having room in the curriculum was a sub-domain formulated from the responses of 13 participants (15.5%). Examples of responses here included "… Time in the curriculum to allow for this type of teaching" and "… The freedom to actually facilitate it rather than content pressures".

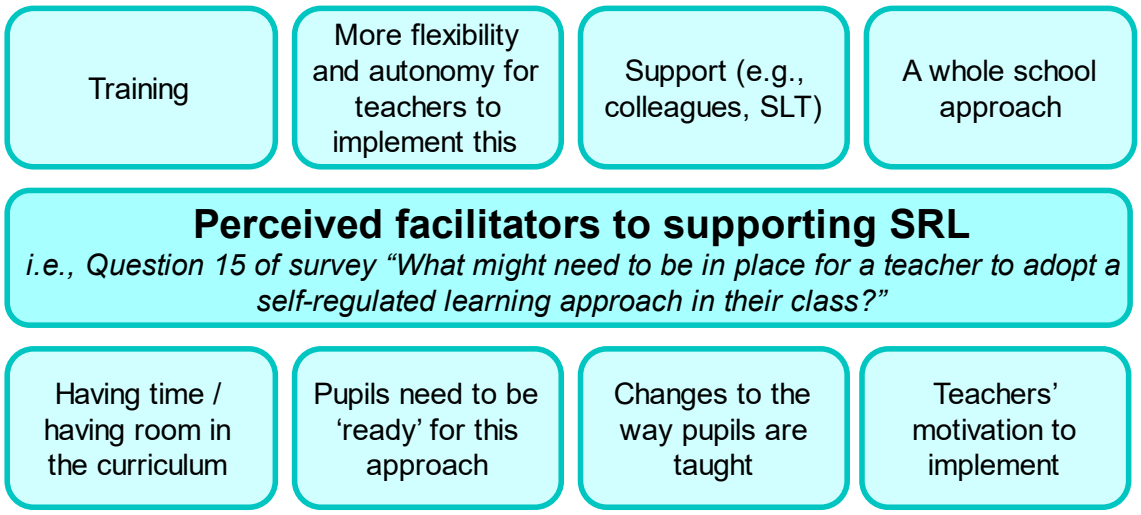
The responses of five participants contributed to the sub-domain *A whole school approach*. Participants described how SRL being implemented as a whole school approach would increase their confidence in supporting it, for example. "Clear whole school policy of what is meant by self- regulated learning…".

Three participants suggested that the *SRL literature may not be accessible to teachers* (e.g., "Demystifying the concept…"). Finally, two participants suggested that *parental support* may increase their confidence in this area.

4.2.6 Perceived Facilitators to Supporting SRL

Figure 17

Domain Summary for Survey Question 15



The sub-domains (1) *Training* (21 participants); (2) *A whole school approach* (15 participants); and (3) *Having time / room in the curriculum* (16 participants) echoed those with the same titles found in the previous domain summary above (section 4.2.5).

The sub-domain *More flexibility and autonomy for teachers to implement this* was formulated based on the responses of 10 participants (11.8%). Examples of responses included "Less monitoring! Freedom to teach without looking over your shoulder all of the time" and "The trust from senior leaders to allow teachers to be able to implement an enabling environment to promote self regulated learning".

Support (e.g., colleagues, SLT) was a sub-domain composed of the responses of 20 participants (23.5%). Here, it was emphasised that having support in place would be needed, whether this was from other teachers, SLT or a learning mentor. For example, "The support of a colleague, learning mentor or head of department".

Nine participants (10.6%) contributed to the sub-domain *Pupils need to be 'ready' for this approach*, suggesting that there are prerequisites for developing SRL skills. Examples of responses included "Listening skills of students" and "Appropriate behaviour".

Eight participants (9.4%) suggested that there would need to be *Changes to the way pupils are taught*. For example, "A more child led learning approach", "Smaller class sizes", and "…positive learning environment. Get rid of scores, % and grades".

Finally, three participants contributed to the sub-domain *Teachers' motivation to implement.* These responses included "… willingness to implement" and "… dedication to the cause".

4.3 Thematic Analysis and Interpretation

An analysis of the interview data was completed using Braun and Clarke's (2022) six-stage process of Reflexive Thematic Analysis (see Figure 5 and Appendix 23). This resulted in the development of four overarching themes, comprised of 12 subthemes. These themes are presented in Figure 18 and are explored in further detail in Table 13 (see Appendix 23 for all extracts related to each theme).

Figure 18

Thematic Map

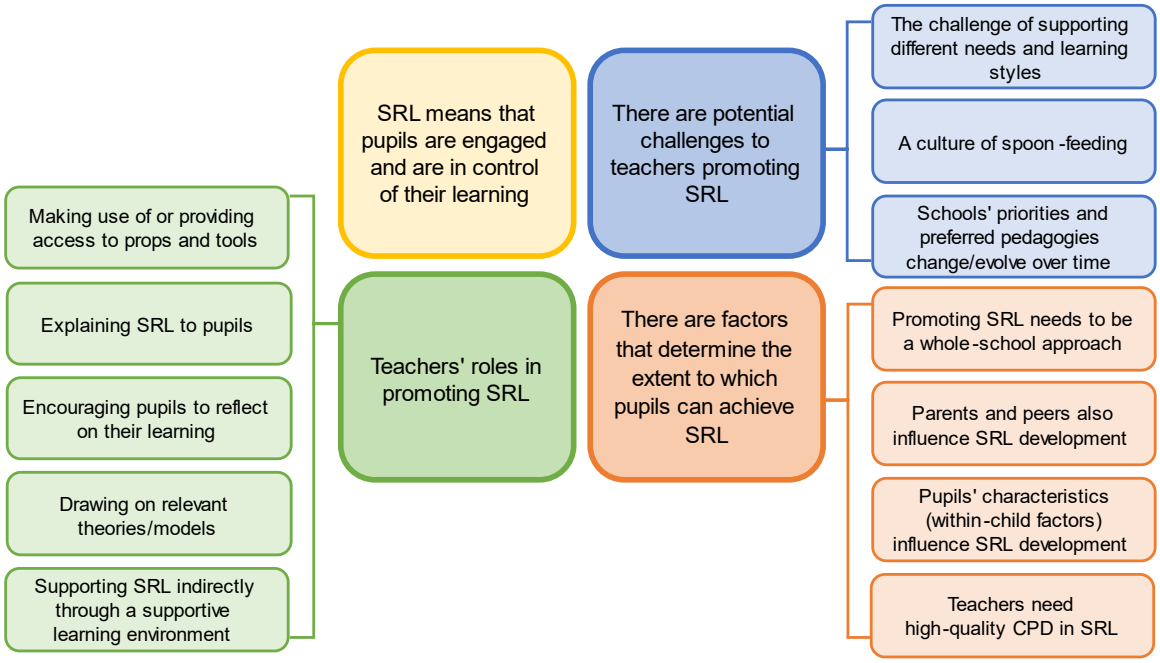


Table 13

Exploration of Themes

Theme 1: SRL means that pupils are engaged and are in control of their learning	
Description of theme	**Illustrative Quote**
Participants identified that pupils who are self-regulating their learning are motivated and want to improve their work. Participants also linked this to these learners taking responsibility for their own learning to various degrees (it was noted that this notion of independence would mean that it may look different in different learners); participants used terms such as 'ownership', 'independent', 'drive', 'strive', 'vision', 'inquisitive' and 'passion' here. It was also acknowledged by participants that SRL is a cycle or a process that learners go through when being actively engaged in their learning.	***Participant 1 (p. 15) –*** *"… obviously self regulating it's independent (.) so each pupil would be perhaps going about it in a slightly different way…"* ***Participant 2 (p. 3) –*** *"…it's more um taking ownership of your own learning and the work you produce (.) so it's not being hundred percent reliant on teachers…"* ***Participant 2 (p. 5) –*** *"…I think key to self-regulating learning is motivation because you have motivation to really er strive to improve your grades…"* ***Participant 3 (p. 3) –*** *"…my understanding is that it's about um planning what needs to be done (.) um how we going to access this activity um and then as you're doing the activity monitoring the progress (.) um how you doing what you're struggling with what what works well (.) and then upon completing it (.) sort of reflecting on the journey then and the process and taking from it then what we can for future activities…"* ***Participant 4 (p. 2) –*** *"…they have to want to learn so they have to um have interest and be engaged in what you're offering them in the classroom …"*

Theme 2: There are potential challenges to teachers promoting SRL		
Participants discussed challenges to teachers promoting SRL (both implicitly and explicitly); these were often systemic in nature (e.g., educational priorities and expected working practices), however individual pupil characteristics were also suggested as having an impact here (e.g., SRL may not be appropriate for all pupils due their ALN and preferred learning styles).		
Subtheme	**Description of subtheme**	**Illustrative quotes**
The challenge of supporting different needs and learning styles	Participants described how teachers may face challenges in promoting SRL due to pupils having different learning styles and some pupils having ALN: it was emphasised that SRL is one of many approaches and no single approach will work for every pupil.	***Participant 5 (p. 9) –*** *"…so I think like the self regulated learning is one way … I wouldn't ever use just one way of teaching to me it's pulling bits out and what works for your particular class that year (.) um having a combination of <u>all</u> teaching styles because every child is different what works for one doesn't work for another (.) so if you're going in we're doing self regulated learning not everybody will respond to that… it's about getting a balance really have a bit of this and a bit of that so that everybody is supported in their learning…"*
A culture of spoon-feeding	It was noted by participants that pupils can be overly reliant on teachers and that this is the result of pupils' and teachers' behaviours, and the ethos of schools. This appeared to represent a challenge to teachers promoting SRL as it denotes a very different approach to what pupils are accustomed to.	***Participant 1 (p. 2) –*** *"…I personally feel that students rely too heavily on (.) teachers spoon feeding them information (.) um we've got a really bad culture for that in our school…"* ***Participant 5 (p. 8) –*** *"…I think a lot of kids would say well you're the teacher you're here to teach us you know I've I've had that from children in the past…"*
Schools' priorities and preferred pedagogies change / evolve over time	It was suggested by participants that the approaches used to teach pupils, and educational priorities, change over time in response to wider systemic influences (e.g., research, Covid-19). During analysis, it was interpreted that this may suggest that SRL is another	***Participant 2 (p. 2) –*** *"…learning styles when I first went into teaching (.) it was all visual kinaesthetic auditory learning (.) that's sort of gone off the radar a little bit…"* ***Participant 3 (p. 1) –*** *"…since COVID there's been a major focus on maths and language um and just getting those skills up to scratch before then they can be transferred across the curriculum…"*

	approach which may 'come and go' as others have, thus representing another potential challenge for teachers promoting SRL in their practice.	***Participant 5 (p. 7) –*** *"…teaching is not sitting down and just imparting information anymore…"*
Theme 3: There are factors that determine the extent to which pupils can achieve SRL		
Many elements were identified as determining the extent to which pupils can achieve SRL. These ranged from within-child characteristics (e.g., neurodevelopmental differences) to systemic factors such as parental and peer influences, the need for a whole school approach and staff receiving CPD. These factors appeared to be constructed as being generally outside of the control of teachers, the exception being the recognition that teachers have autonomy to research SRL themselves.		
Subtheme	**Description of subtheme**	**Illustrative quotes**
Promoting SRL needs to be a whole school approach	Participants emphasised the need for consistency in promoting SRL in order for it to be effective, and it was asserted that such an approach would need to be prioritised by the school. Without a whole school approach, it was felt that pupils would not be able to develop their SRL skills, and staff would also benefit from the support that comes with a whole school initiative.	***Participant 1 (p. 12) –*** *"…if your school's got a priority (.) you have to go with that priority (.) and so for consistency across the school (.) it would need to be like a whole school approach if that makes sense (.) and I think unless it was a whole school approach it wouldn't be effective…"* ***Participant 3 (p. 10) –*** *"…I think it needs to be whole school just for the for the children and for staff sanity as well…"*
Parents and peers also influence SRL development	Participants described how there are many key people who will help pupils foster SRL skills: school staff, parents and peers. Participants felt that parental influences were particularly important as school staff are only able to support pupils' learning and motivation during school hours.	***Participant 2 (p. 7-8)*** *"…um definitely comes from parents (.) um as I say a lot of self-regulation is done by motivation (.) and I think if if you're given a drive by parents parents hundred percent contribute to students' outlook on education and life… I would say it's a combination of everything parents er teachers peers and life experiences…"*

		Participant 4 (p. 9) – *"…I well I think it's a combination … it depends very much on a pupil's home environment (.) um certainly it should come from it should come from school…"*
Pupils' characteristics (within-child factors) influence SRL development	Participants asserted that within-child characteristics would determine SRL ability and development. Age, gender, communication (language) skills and neurodevelopmental differences were highlighted here. Some participants emphasised that these factors would mean that some pupils show SRL skills in different ways or to different extents, whilst other participants suggested that these factors would impact on whether or not pupils would be able to develop these skills at all.	***Participant 1 (p. 16) –*** *"…I think some pupils are naturally better at it than the others…"* ***Participant 2 (p. 7) –*** *"…some of it is just general maturity and personality … generalising girls tend to have those at a younger age than boys… because of maturity and those self-regulation skills don't really kick in until when they're at college or university (.) whereas where girls I think they generally develop them a little bit more um in high school"* ***Participant 4 (p. 7) –*** *"…I don't know how aware the pupils in my classroom are about <u>their</u> learning process… at age yeah year three and four (.) maybe maybe some of my more able year fours probably year threes they might be beginning to start beginning to think about the way they learn…"* ***Participant 5 (p. 10)*** *– "with supporting more and more autistic children in mainstream (.) and I think they would sometimes struggle with the lack of structure in a lesson like that (.) that's more child-led… children with speech and language difficulties … children with ADHD would probably struggle as well…"*
Teachers need high-quality CPD in SRL	It was emphasised that teachers would need training and support in order to promote SRL in their settings. This was recognised as being important to increase teachers' knowledge and confidence in this area. Participants also highlighted the complexity of the	***Participant 1 (p. 14) –*** *"…if it was something that the school decided to adopt (.) then I do feel like it would be beneficial for staff to receive kind of training INSET or like CPD sessions on that…"* ***Participant 2 (p. 10) –*** *"…I think CPD um issue is really big…"*

	concept of SRL and the need for examples of how to support its development.	***Participant 4 (p. 13) –*** *"…if I don't understand it (.) how on earth am I going to get a whole bunch of seven eight and nine year olds to understand it … it would be maybe get examples or you know see examples or hear of examples of other teachers how they've um taught it in their classrooms…"*
Theme 4: Teachers' roles in promoting SRL		
Participants described how teachers may promote SRL in their practice and this ranged from direct instruction to supporting these skills indirectly through the provision of a supportive learning environment. Participants also emphasised the teacher's role in explaining SRL to pupils in an appropriate, accessible way. Encouraging pupils to reflect on their learning was found to be an important aspect of teachers supporting SRL. Participants also made links between SRL and other relevant psychological and/ or theories and models and described how they drew on these in their practice.		
Subtheme	**Description of subtheme**	**Illustrative quotes**
Making use of or providing access to props and tools	Participants described a range of tools or props in the classroom which helped to support pupils' development of SRL skills, i.e., accessible devices for pupils to use which encourage goal setting, planning and reflecting on learning.	***Participant 3 (p. 6) –*** *"…she'll then have a think about what she needs to access that learning so if it's writing she'll say 'I need to go get a sound mat' or if it's maths (.) she'll say (.) 'I need a number line or a hundred square'…"* ***Participant 3 (p. 6) –*** *"… she'll go to the wall she'll choose the sea creature that suits her learning journey best then and that's how she'll self-assess…"* ***Participant 5 (p. 11) –*** *"…so setting goals… so we've got kind of like in our classes superhero boards where it's you know I want to be super at this and they set themselves a challenge … the self regulated learning can help them with the challenges then to you know 'I want to be better at sharing my ideas' or 'I want to be better at getting my ideas down on paper' or 'making my voice heard' (.) um so I think that way (.) by setting goals that's really good for them"*
Explaining SRL to pupils	Participants emphasised the importance of explaining the concept of	***Participant 1 (p. 12) –*** *"…I think it is important to be ((pause)) to explain to the pupils that this is what we're going to teach you to do (.) and once*

	SRL to pupils in a way that is accessible and helpful for pupils. All teachers (primary, secondary and special schools) noted that this is important in order to persuade pupils to invest in this approach to learning. The notion of modelling the language and the process of SRL was evident across participants.	*we've taught you to do it this is a skill that you'll have for life then (.) and that you can use across all subjects (.) across all year groups…"* ***Participant 3 (p. 8) –*** *"…I think I just go through the steps and just use child friendly language I say 'right what do we need to do? what's our job for today?' I start off 'okay so what might we <u>need</u> to do this job in terms of what <u>resources</u> could we pull on? what prior knowledge could we reflect on um what strategies could use?'…"* ***Participant 4 (p. 10) –*** *"…I think you should it should try to be explained (.) obviously at a <u>very</u> basic level… I often think if you can give like a if you can give an example that a child can relate to you know like a story of something you know related to something that they know that something that is familiar to them…"*
Encouraging pupils to reflect on their learning	Promoting reflection on learning was described as an important component of teachers' current practice, but was also recognised to be a key aspect of SRL. Participants described how encouraging reflection on learning was implemented as a whole school approach (not necessarily as part of an explicit SRL cycle).	***Participant 2 (p. 9) –*** *"but then you would have some self-assessment and also um self-reflection …for example my current school where with the assessment we put (.) um after we've marked it there's a space for them to self-reflect (.) so it promotes self-regulation…"* ***Participant 3 (p. 8) –*** *"and then helping them reflect and you know 'what worked well' and 'even better if'…"*
Drawing on relevant theories / models	Participants made links between SRL and relevant psychological and / or learning theories / models. They described how they apply these in their practice. SRL was seen as being congruent with promoting a Growth Mindset. Zimmerman's model	***Participant 1 (p. 8) –*** *"…I definitely have come across metacognition because I've looked at it with (.) um like (.) recall theory (.) and is it Rosenshine's?..."* ***Participant 2 (p. 1-2) –*** *"…(.) I think Rosenshine's principles just summarise everything up (.) because otherwise it just gets a little bit too*

	describing the three-phase model of SRL was discussed by two participants as being familiar or used in their practice. Participants also discussed the importance of the literature being accessible to teachers.	*complex (.) not just complex for students it gets too complex for staff as well…"* ***Participant 3 (p. 4) –*** *"…I think it's the Zimmerman one in terms of how we approach it as a school…"* ***Participant 3 (p. 11) –*** *"…it would literally just come under the topic of growth mindset for us"* ***Participant 5 (p. 4) –*** *"…well (.) it reminds me we (.) we've recently done a course and are having a big push with the new curriculum coming into Wales on growth mindset…"*
Supporting SRL indirectly through a supportive learning environment	Participants described how the provision of a supportive learning environment with access to resources, modelling and scaffolding, could help teachers foster their pupils' SRL skills. It was felt that pupils needed to 'build up' to SRL and that promoting motivation and an enjoyment of learning was integral to this. Participants also described how child-led activities would be important here.	***Participant 1 (p. 13) –*** *"…I think it's just building it up to them being able to do (.) kind of larger chunks of self regulated learning … I think it would need to be embedded slowly …so I think it would need to be chunked…"* ***Participant 1 (p. 16) –*** *"…I think that all students are capable of doing it if it's <u>structured</u> and <u>scaffolded</u> well…"* ***Participant 3 (p. 7) –*** *"…I think all the children are capable of doing it within the right environment with the right tools (.) and I think it's just basically the ethos that they're surrounded in…"* ***Participant 3 (p. 8) –*** *"…I've got some children who are obviously are more able to monitor their learning but then I got others then who (.) I'd just use my questioning throughout just to steer them back to monitoring that process 'right let's have a check now then are we on track to doing that? show me how what are we gonna do next?' and just helping them to sort of coordinate it (.) but being more of like a facilitator as opposed to an instructor then…"*

		Participant 4 (p. 9) – *"…I think a good teacher gives provides like various like I said right at the beginning various ways of learning a skill… and they've learned because they've enjoyed it or they've enjoyed it because they've learned a bit of both probably…"*

5. Discussion

5.1 Overview

This exploratory research represents the first to examine teachers' perceptions of supporting pupils' SRL in education settings in England and Wales. The aim was to investigate what teachers understand by the term SRL, explore their beliefs regarding SRL, and consider how they may support pupils' SRL. The results from the descriptive statistics, domain summaries, and thematic analysis are explored below in relation to each research question. Following this, implications for EP practice, the strengths and limitations of the research, and suggestions for future research are considered.

5.2 What Do Teachers Understand by the Term SRL?

Results suggested that the majority of the teachers in this sample had some understanding of SRL and its different components, such as metacognitive, affective and motivational aspects. This was despite the finding that with regards to how familiar survey participants were with the term SRL, almost half of participants were either 'not at all familiar' or 'slightly familiar' and very few participants were 'very familiar or 'extremely familiar', suggesting that the practice of explicitly promoting pupils' SRL skills may not be widespread in this sample of teachers. Very few teachers demonstrated knowledge or understanding of *all* the components of SRL; rather, most offered at least one component or demonstrated some understanding of certain aspects, rather than being able to provide a more comprehensive / holistic definition. In line with previous research (e.g., Dignath & Sprenger, 2020), some participants were found to hold misconceptions by describing SRL simply as pupil autonomy and self-directedness rather than as a *regulation* process.

SRL is not systematically covered in teacher training, creating a wide range of experience with SRL between teachers (i.e., due to professional development; Karlen et al., 2020). Findings regarding teachers' understanding of SRL were interesting, given that the majority of teachers in this sample had not received any formal training on SRL (only 21.43% of survey participants had received any training on SRL, and of these, only three participants

who completed the survey [out of a total of 98] had received training on SRL during their initial teacher training). Teachers in this sample generally appeared to be aware of, have knowledge and hold beliefs about SRL, despite having received little or no training in this area. This may suggest that participants in this sample had read about SRL due to their own interest in this area (e.g., the EEF's [2018] guidance report *Metacognition and Self-Regulated Learning*), from reading other documentation aimed at school staff (e.g., *Curriculum for Wales guidance* [Welsh Government, 2020]), or perhaps the term SRL allows for some inductive inference from its name.

Many survey participants characterised SRL as being where pupils take control of their learning or pupils having ownership over their learning process. This assumption (that in SRL, the control of learning rests with the learner) is shared by many theoretical views of SRL (e.g., operant, volitional, Vygotskian, social cognitive etc. [Dignath & Veenman, 2021; Paris & Paris, 2001]). This was echoed by the thematic analysis findings, where participants identified that self-regulated learners take responsibility for their learning, are motivated to want to improve their work, and go through the SRL cycle / process. SRL was also identified as being a cycle / process by a small proportion of survey respondents. Some interview participants explicitly referenced their knowledge of Zimmerman's (2000) three-phase model, and many survey participants described components of the Forethought Phase (Zimmerman, 2000) when describing what SRL meant to them (i.e., pupils analysing the task, setting goals, and planning how to reach them). Reflecting on learning was understood by many survey and interview participants as being a component of SRL, and some participants related this reflection to pupils therefore being able to improve future learning as a result. This represents the final phase of Zimmerman's (2000) model, the self-reflection phase, where learners assess their task performance, making attributions regarding their success or failure where these attributions can influence how the pupils approach the task in future performances (Panadero, 2017).

5.3 What Are Teachers' Beliefs About SRL?

Consistent with previous research (e.g., Geduld, 2019; Heirweg et al., 2021; Karlen et al., 2020; Mahendiran & Kumar, 2017; Soliman & Alenazi, 2017; Spruce & Bol, 2015), results suggested that teachers in this sample generally held positive beliefs about SRL: for example, the majority of respondents to the survey rated the importance of SRL skills for their pupils, and the importance of teaching SRL skills in addition to content knowledge, as being either 'very important' or 'extremely important'. Survey participants' positive beliefs about SRL was also apparent across most domain summaries, for example, some participants cited their perceptions of the importance of SRL for pupils in terms of building confidence and becoming a lifelong learner. This finding is in line with previous research where teachers have been found to perceive SRL as important or beneficial for pupils (e.g., De Smul et al., 2019b; Heirweg et al., 2021; Huh & Reigeluth, 2018; Yan, 2018).

Three quarters of survey participants believed that all pupils can learn to self-regulate their learning. Here, participants cited the importance of good quality teaching and support to foster the development of SRL. The literature consistently emphasises the crucial role teachers play in pupils' SRL development (e.g., Boekaerts 1997; Stoeger et al., 2014). It was also recognised by survey participants that pupils will learn SRL at different rates, some pupils will require greater support in this area, and SRL may look different in different pupils. Those participants who felt that not all pupils can learn to self-regulate their learning suggested that ALN, home life experiences, age and literacy and numeracy ability were reasons for this. Consistent with previous research, these findings were also evident from themes and subthemes developed from interview data; participants described how pupils' characteristics (within-child factors) such as age (Peeters et al., 2016; Spruce & Bol, 2015; Thomas et al., 2020), gender (Peeters et al., 2016), communication skills and neurodevelopmental differences (Peeters et al., 2016), would determine the extent to which pupils can achieve SRL; participants also highlighted how it can be challenging to support a variety of needs and learning styles. Interview data revealed that participants perceived

parents and peers to also be key influences in pupils' SRL development, as highlighted in the literature, for example, Venitz and Perels (2019) emphasised the significance of the support of importance reference persons in the development of SRL behaviour.

The support from colleagues, SLT and wider organisations (Local Authority, Government) as well as having room in the curriculum to implement such an approach, was noted to be important by survey participants, replicating the results of Alvi & Gillies (2020b) and Geduld (2019). In addition, a whole school approach was felt to be needed to increase teachers' confidence in promoting SRL, and in facilitating teachers supporting SRL. These findings were also evident from themes and subthemes developed from interview data, where, without consistency and a whole school approach it was felt that pupils would not be able to develop their SRL skills; furthermore, it was felt that staff would benefit from the support that comes from a whole school initiative. Additionally, a culture of spoon-feeding in schools was felt to be a potential challenge to this sample of teachers promoting SRL. Previous research has found that the most important prerequisite for SRL implementation is a whole school approach rather than the individual responsibilities of teachers (De Smul et al., 2019a; James et al., 2007). Similarly, Thomas et al. (2020) identified school policy concerning SRL as being a significant correlate of SRL promotion. Furthermore, school characteristics have an indirect impact on pupil learning via teacher beliefs and behaviour (Hallinger, 2010).

Another subtheme was developed following interview participants suggesting that because the approaches used to teach pupils, and educational priorities, change over time in response to wider systemic influences, SRL may be another approach which could 'come and go' without being sustained or embedded for a long period of time. Research may support this concern, as it has been found that only a very few educational innovations result in long-lasting changes in teachers' and schools' practice (Hargreaves & Goodson, 2006). Indeed, in his recent book *The Self-Regulated Learning Guide: Teaching Students to Think*

in the Language of Strategies, Cleary (2018) acknowledged that teachers may ask the legitimate question “is SRL just another fad or another short-term trend in education?” (p. 1).

A gradual and whole school approach to SRL implementation has been posited to be needed in conjunction with professional learning from the school as a learning organisation (Muijs et al., 2014; Peeters et al., 2014). The need for professional development and a professional learning community within schools for successful SRL implementation was highlighted by the research of De Smul et al. (2019a). Survey participants in the current study also asserted that collaboration between teachers and receiving training may help increase teachers’ confidence in this area. The subtheme developed from interview data ‘the need for high quality CPD in SRL’ echoed this finding, as participants highlighted the complexity of the concept of SRL and the need for increased knowledge and confidence in this area. The results of this study are consistent with previous research which has found that whilst teachers agree with the concept of supporting their pupils to become self-regulated learners, many of them report feeling unsure about how to do so (Dignath & Büttner, 2018; Dignath et al., 2013).

Some survey participants felt that teachers needed greater flexibility and autonomy in order to implement this approach. This may reflect the assertation made by James and McCormick (2009), where because the implementation of SRL in classrooms would mean giving pupils more control and responsibility of their own learning, it therefore requires a redefinition of the role of the teacher. Furthermore, Karlen et al. (2020) posited that teachers’ motivation for teaching SRL may vary widely, and this was echoed by survey participants who noted that teachers would need to be motivated to promote their pupils’ SRL.

5.4 How Do Teachers Support Pupils’ SRL?

Teachers in this sample provided examples of how they do, or would, stimulate the use of different SRL strategies in pupils. Literature suggests that because SRL is considered an umbrella learning principle, teachers are usually able to provide at least some examples of how they do promote this (Lombaerts et al., 2007; Panadero, 2017). The subtheme

‘supporting SRL indirectly through a supportive learning environment’ was developed due to the identification of clear patterns in the data related to the importance of providing access to resources, modelling, scaffolding, promoting motivation and enjoyment of learning and encouraging child-led activities. These can be seen as the ways this sample of teachers promote (or would hypothetically promote) SRL in their settings. Promoting SRL through the construction of a supportive learning environment is widely recognised in the literature as one of two main ways teachers can promote SRL skills (De Corte et al., 2004; Dignath & Büttner, 2018; Perry, 2013), the other being directly through the instruction of strategies. Interview participants also emphasised that teachers need to help pupils to ‘build up’ SRL skills over time, also echoing the literature: SRL is a complex and gradually developing competency that should be promoted gradually across subjects and grades (Heirweg et al., 2021; Vandevelde et al., 2012).

Interview participants described a range of tools or props in the classroom which helped to support pupils’ development of SRL skills. These corresponded to the first and last phases of Zimmerman’s (2000) three-phase model of SRL: teachers described props in the classroom to support pupils’ goal setting and planning (*forethought phase*) and reflecting on learning (*self-reflection phase*).

Previous research recognises that cultivating reflection skills is one way in which teachers promote pupils’ SRL skills (e.g., Alvi & Gillies, 2015, 2021; Chatzistamatiou & Dermitzaki, 2013; Spruce & Bol, 2015). In the current research, almost all survey participants rated *Encouraging pupils to reflect on and evaluate after a learning task* as ‘important’. Similarly, interview participants described how encouraging pupils to reflect on their learning was an important role teachers played, and it appeared that they felt that this represents good practice, i.e., independently of being a component of SRL.

Interview participants made links between SRL and relevant psychological and / or learning theories / models and described how they applied these in their practice. These findings suggested that some teachers in this sample were demonstrating a deeper

understanding of SRL and utilising various approaches which are congruent with, and facilitate, supporting SRL. Some of the interview participants referred to Zimmerman's three-phase model of SRL and asserted that this was used as a framework for promoting SRL. Some participants made links between metacognition and Rosenshine's Principles, suggesting that this would be helpful in promoting some aspects of SRL.

SRL was also seen by interview participants as being related to, or congruent with, promoting a Growth Mindset. Recent research has investigated pupils' mindsets and self-concepts about SRL, concluding that pupils who think SRL is a malleable ability and believe that they have enough competencies in SRL to overcome challenges might be more likely to seek out opportunities to apply strategies (Karlen et al., 2021), highlighting a link between Growth Mindset and SRL. It could be argued that the current research has further links with Growth Mindset. Some teachers who took part appeared to present with more 'fixed' rather than 'growth' mindsets regarding their ability to promote pupils' SRL. Teachers with more fixed mindsets create more self-fulfilling prophecies when it comes to pupil achievement (Dweck, 2015); indeed, some participants in the current research felt that not all pupils can learn to self-regulate their learning due to within-child characteristics. Research suggests that teachers themselves may need a growth mindset in order to adopt and implement new approaches such as promoting SRL: Gero (2013) found that teachers with a growth mindset felt that trying out new teaching methods was valuable and outweighs the risk of making mistakes. Teachers with growth mindsets were also found by Gero (2013) to engage in more professional development and collaborative activity.

5.5 Summary

Despite many having received little or no training in this area, the majority of teachers in this sample demonstrated some understanding of the different components of SRL; however, few were able to provide comprehensive or holistic definitions, and some were found to hold misconceptions. Teachers in this sample generally held positive beliefs about SRL and most felt that all pupils can learn to self-regulate their learning. A number of

individual differences between pupils, and systemic factors, were felt by some teachers to determine the extent to which pupils can achieve SRL. Support for teachers in promoting SRL was consistently believed to be important, for example through a whole-school approach, receiving training, and collaboration between teachers. A range of examples of how teachers in this sample currently (or would hypothetically) support pupils' SRL skills were identified. These included cultivating reflection skills, using classroom tools or props, and constructing a supportive learning environment.

5.6 Implications for EP Practice

Teachers in this sample emphasised the need for high quality training and CPD in supporting pupils' SRL. EPs promote psychology within education settings (AEP, 2021), and to facilitate change, the role of the EP requires working at multiple levels with a range of other professionals. EPs can provide training and develop the skills of others such as teachers (AEP, 2021; Cline et al., 2015). Therefore, EPs are arguably in an ideal position to provide training to school staff seeking to promote their pupils' SRL skills. If education settings wanted to prioritise implementing an SRL approach, the knowledge and skills of EPs would allow them to work with Headteachers or other members of the SLT to create bespoke training packages for individual schools or school clusters, or create generic training where schools can then adapt recommendations to suit their individual organisation's needs.

When providing training for teachers in this area, as highlighted by the EEF's (2018) guidance report *Metacognition and Self-Regulated Learning*, "teachers should acquire the professional understanding and skills" (p.6). It would need to be emphasised that SRL capabilities are developed within social learning systems (Järvenoja et al., 2015; Volet et al., 2009) requiring support via competent models (Bandura, 1977, 1986) and mediation (Vygotsky, 1978); i.e., because SRL is a set of teachable skills that can be instilled by education and instruction [Zimmerman & Schunk, 2011]), the concept of SRL, and the important role teachers play, needs to be explained in order for it to be promoted effectively.

EPs could also encourage teachers to adopt growth mindsets when adopting novel approaches such as promoting SRL (see section 5.4 above).

A whole school approach was felt to be needed by teachers in the current research to increase their confidence in promoting SRL, and in facilitating teachers supporting SRL in their practice; teachers also highlighted the importance of support from colleagues and SLT. EPs could have a role in facilitating the setting up of working groups within and between schools to share best practice in promoting SRL. Previous research has shown that the establishment of dialogue and discussion, and / or the opportunity to share ideas as a community, is a key component in teacher learning (Shulman & Shulman, 2004). Furthermore, research has found that as well as using their own past experience of 'what works', the opinions and experiences of colleagues within their own and other schools is used by teachers when making decisions about which teaching approaches to adopt (Greany & Brown, 2017; Nelson et al., 2017; Walker et al., 2019). The findings from the current research, when considered in conjunction with the aforementioned research results, suggest that in order to facilitate change, EPs could encourage the use of 'working groups' (or other forums providing space for collaboration) between school staff when promoting different (particularly novel) approaches.

The results of this research suggest that the teachers in this sample generally held positive beliefs about SRL and could demonstrate some understanding of the term and how to promote SRL in their pupils. This, in conjunction with the publication of guidance aimed at teachers to support SRL (e.g., EEF, 2018) and an emphasis of aspects of SRL in the curriculum (e.g., Welsh Government, 2020) offers the possibility that EPs could promote the use of action research in schools where staff are invested in seeking to implement an SRL approach. This is because EPs provide a link between academic psychology and education (Elliot, 2000) and the role of the EP encompasses assessing evidence bases of different psychological and learning theories and approaches (Cline et al., 2015). The use of action

research by EPs in this context would be particularly useful to provide insight into the factors that support or hinder schools and teachers in fostering SRL in their pupils.

Previous research has found that teachers can perceive approaches to be incompatible with available resources in their setting, or conflict with a school's existing initiatives or culture (e.g., Bumbarger & Perkins, 2008; Forman et al., 2009; Powers et al., 2010), and the current research echoes this. As practitioners who are familiar with the structures and systems within and around education settings, and who engage in systemic thinking, EPs are well placed to appreciate and support staff to overcome perceived barriers when attempting to engage with new approaches. Furthermore, EPs promote psychology within wider systems such as Local Authorities (AEP, 2021). Teachers who took part in this research highlighted that the support from wider organisations (Local Authority, Government) would increase their confidence in promoting pupils' SRL. As noted by Beaver (2011), change does not always require more in terms of resources: it usually requires new approaches and strategies to enhance educational and developmental opportunities. The outcomes of action research in schools promoting pupils' SRL skills could help inform educational policy. As professionals who engage in work at strategic levels, EPs may have a role in contributing to this area.

5.7 Strengths and Limitations of the Research

The present study is innovative because, to the researcher's knowledge, it represents the first study in the context of SRL to investigate teachers' understanding, beliefs and practices in England and Wales. This research was therefore explorative and offered a unique perspective. Whilst the current sample represents a small number of teachers, it has integrated detailed yet varied perspectives of teachers in the context of SRL in education settings in England and Wales. However, previous research investigating teachers' perceptions of SRL have recognised that teachers volunteering to take part in this area of research are likely to be more interested in SRL (e.g., Dignath & Sprenger, 2020), be

more motivated, and have greater knowledge in this area (e.g., Michalsky, 2017) than the general population, representing a limitation. However, in the current sample, with regards to how familiar survey participants were with the term SRL, almost half of survey participants were either 'not at all familiar' or 'slightly familiar' and very few participants were 'very familiar or 'extremely familiar'. This suggests that a large proportion of participants may have participated in this research due to some interest in this area, however they did not necessarily have greater knowledge.

A strength of the current study was that it collected data from multiple instruments (survey and interviews). Interviews represent a useful qualitative approach for inquiry into complex educational phenomena such as SRL, beliefs, experiences, and the dynamic interplay between individuals and contexts (De Groot, 2002). The use of a survey to collect data permitted gathering the views of a larger number of teachers than would have been possible if using interviews alone. Nevertheless, this research collected data generated solely from self-report instruments. It has been argued that self-report measures (i.e., semi-structured interviews and surveys) are useful in terms of shedding light on the *perceptions* of individuals' behaviour, however they cannot map the individual's *actual* behaviour (Heirweg et al., 2021). Furthermore, previous research in the context of SRL has found that teachers' self-reports of their promotion of SRL do not necessarily correlate with classroom observations of teachers' SRL instruction (e.g., Dignath & Büttner, 2018). Whilst utilising self-report measures to investigate the perceptions of teachers can arguably *contribute* to a better understanding of their behaviour (Heirweg et al., 2021), they may elicit socially desirable responses and are sensitive to over- or under-estimation of the actual behaviour (Boekaerts & Corno, 2005; Cromley & Azevedo, 2006). This study's methodology attempted to reduce social desirability by using a semi-structured interview schedule and including open-ended survey questions.

This research represents data collected from a small sample size (98 survey participants and 5 interview participants). Furthermore, it is acknowledged that the diversity

of the sample (in terms of participants' years of teaching experience and age of pupils taught) reduces the specificity and generalisability of findings. However, as exploratory research, the aim was not to be able to generalise findings to the populations of teachers in England and Wales, but this research may offer some transferability. Due to the researcher describing the specific context, participants, settings, and circumstances of the study, the reader can evaluate the potential for applying the analysis to other contexts and settings (Braun & Clarke, 2022). It is acknowledged that the burden of determining transferability is therefore placed on the reader (Braun & Clarke, 2022).

5.8 Suggestions for Future Research

Given the reliance on self-report measures, it could be argued that the instruments used in the current study were not adequately precise in eliciting which specific strategies teachers do or do not implement in the classroom. Different measurement instruments can be used to capture different aspects or perspectives of implementation (Patrick & Middleton, 2002). Future research could combine self-report measures with observations to aid the identification of teachers' actual strategy use; classroom observations have been argued to be able to provide more suitable ways to capture teachers' instructional practice to support SRL (Butler, 2002; Perry et al., 2002). Combining these with artefacts (e.g., lesson plans, pupils' schoolwork) may add another dimension and depth to these investigations. Therefore, capturing overt behaviour via observations, and underlying mental processes via self-report measures (Veenman & van Cleef, 2019) may offer a more balanced picture. Case studies offer a rigorous and comprehensive frame of inquiry, allowing researchers to conduct in-depth investigations within natural settings (Alvi & Gillies, 2020b). Furthermore, longitudinal research looking at teachers' perceptions and practices over time may provide a more holistic view, as cross-sectional designs are only able to provide a snapshot of one point in time.

Future research could utilise a larger sample size to investigate teachers' perceptions of supporting SRL to enable generalisability or greater transferability of findings to teaching

populations in England and Wales. Exploring differences between teachers according to their demographic variables (e.g., years' teaching experience, age of pupils taught etc.) may illuminate factors which have an impact on or contribute to teachers' understanding, beliefs and practice. Research comparing teachers' understandings, beliefs and practices in schools adopting a whole school approach to supporting SRL and those who are promoting SRL in schools where this practice is not widespread, may also help to explore the impact of the school context on teachers' perceptions and practices in this area.

6. Conclusion

This research offers a unique in-depth exploration of teachers' perceptions of supporting SRL in the context of education settings in England and Wales. Whilst some aspects of teachers' understanding, beliefs, and pedagogical promotion of SRL varied between individual participants, the findings suggest that: (1) whilst some teachers held misconceptions regarding SRL, the majority of the teachers in this sample had some understanding of SRL and its different components, despite few having received training in this area; (2) teachers were found to hold positive beliefs about SRL in terms of its importance, benefits, and suitability for their pupils; teachers also identified both within-child and systemic factors which may facilitate or impede their ability to promote SRL in practice; finally, (3) teachers in this sample were able to provide a range of examples as to how they support their pupils' SRL skills.

Representing the first piece of empirical research to investigate teachers' perceptions of supporting SRL in the context of education settings in England and Wales, this offers a valuable starting point for further research. This research has also highlighted the role of EPs as scientist-practitioners in this area.

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Teachers' Perceptions of Supporting Self-Regulated Learning

Part 3: Major Research Reflective Account

Word Count: 5,642
(7,573 including figures and tables)

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2022

1. Introduction

This critical appraisal presents a narrative of the research journey and offers the opportunity to analyse the research process, particularly in terms of the decisions made, from inception to completion. Consideration will be given to how these decisions impacted upon the knowledge produced.

This reflective and reflexive critical appraisal is presented in two sections to address the following two areas:

- Critical account of the development of the research practitioner.
- Contribution to knowledge and dissemination.

It is acknowledged that these two areas contain overlaps, however a distinction highlights the explicit reflections pertaining to each.

Webb (1992) asserted that the use of third person can conceal how knowledge is actively being created and conveys the impression that what has been written is neutral, value-free, and impartial (i.e., it results in omitting important information). This critical appraisal is therefore written in first person to reflect the reflexive nature of the research process. "…researchers do influence, exercise choices, and make decisions about the directions of their research and the conclusions they draw… honesty in academic and research writings requires an acknowledgement of authors' personal contributions to their work" (Webb, 1992; pp. 751-752).

2. Part A: Critical Account of The Development of the Research Practitioner

2.1 Rationale for the Thesis

I have always had an interest in the development of executive functioning skills of children and young people. For my undergraduate dissertation, I investigated possible cognitive advantages (specifically inhibitory control) associated with bilingualism in secondary school aged pupils; for my master's dissertation, I investigated the relationships between inhibitory control, language ability, and conduct problems, in primary school children.

Executive functions and metacognition are both conceptualised as higher-order cognitive processes (Roebers, 2017), and originally, I had planned to conduct research in the area of metacognitive skills for my thesis. However, following the Thesis Proposal Planning Presentations in December 2020, I came across the term 'Self-Regulated Learning' (SRL). I felt that this encompassed something important that 'metacognition' alone did not: the affective aspects of learning. SRL incorporates both metacognition and motivation applied to learning (Davis et al., 2021). The concept of SRL struck me as being particularly timely in light of pupils having to adapt quickly to blended learning due to Covid-19 restrictions. Reading more about SRL made me think about a piece of casework where a pupil had struggled to engage with more 'independent' (online) learning during the pandemic; I wondered whether if the pupil had been previously supported to develop their SRL skills, they might have been more able to access learning opportunities at this time. Reflecting then on my own SRL skill development, I felt that it was only when I reached University that many of these strategies were explicitly taught. A quote which I read early on, right at the beginning of my research journey, reinforced this: "it is strange that we expect students to learn yet seldom teach them to learn" (Norman, 1980; p. 97). As I began to read more about SRL, I felt that it represented an important topic worth exploring more in the context of the education systems in the UK.

I quickly noticed during my initial reading-around the topic of SRL that there was comparatively very little research conducted in the UK. Despite this, it could be argued that current educational policy and guidance in England and Wales supports pedagogical practices aimed at the development of pupils' capabilities for SRL. I noticed that whilst there are no explicit references to SRL in the English and Welsh National Curriculums, several principles on which the curriculums are based, point to the provision of learning environments that enable the development of SRL skills.

The benefits of SRL were consistently demonstrated in the literature, however I noticed that there was comparatively less research on teachers' perceptions of supporting SRL. Given that educational research should take into account teacher beliefs because of the way these can inform classroom practice (Pajares, 1992), and that evidence-based practice is at risk of reductionism (there may be a focus on outcomes at the expense of insights into the mechanisms involved in the processes of change [Cline et al., 2015]), it felt important to investigate teachers' perceptions as teachers are integral to teaching pupils SRL skills. The research questions were broad and exploratory in nature, given the paucity of research in this area in UK education contexts.

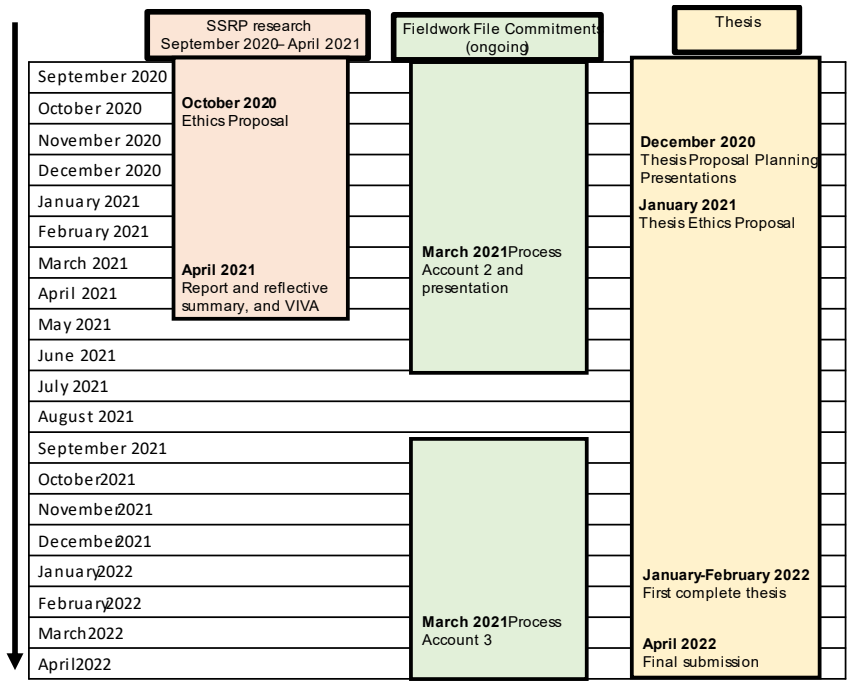
2.2 Literature Review

I found the literature review both the most time-consuming and the most challenging aspect of the research process. During my previous research activities during training (e.g., Small Scale Research Project [SSRP] last year), I learned that research very much happens in the 'real world' and does not exist in a perfect vacuum where things go exactly according to plan as set out in research proposals. Conducting my thesis has extended this to my realising that the structures and systems in place which enabled this research to take place (Cardiff University Ethics Committee, the Doctorate in Educational Psychology [DEdPsy] Programme's timelines, other research and placement commitments etc.) also have an impact on how research is conducted. The ethics proposal was due in January 2021, in the midst of conducting my SSRP, undertaking placement work and completing the necessary

paperwork for my Fieldwork file (see Figure 19). This meant that when I handed in my ethics proposal, I had not yet conducted the 10,000-word major research literature review for my thesis. Decisions were made at this early stage (December 2020-January 2021) which influenced the direction of my research without having an in-depth review of the literature to guide these initial decisions.

Figure 19

Thesis Work in the Context of Other Deadlines



Reflecting on my decision in January 2021 to investigate teachers' understandings, beliefs, and pedagogical promotion of SRL, having conducted the research, I now wonder whether it might have been more helpful to narrow the scope to focus only on the former two research questions (teachers' understanding and beliefs). This is because teachers' reports of what they do (vs. what they 'actually' do) may not be best measured via self-report (something that came up time and again during the scoping review of the literature). Furthermore, focusing only on the former two review questions would have allowed greater

‘depth’ when conducting the scoping review of the literature, analysing and reporting data – given the word-count and time constraints in analysing and reporting the findings of three review questions.

The decision-making criteria used to guide the selection of literature included in the scoping review of the literature (Section 2 of the literature review) are outlined in Table 2 (Part 1, p. 7). Inclusion and exclusion criteria were applied to ensure that the number of studies identified was manageable in the time-frame, whilst still representing the target population for the current research (fully qualified teachers of pupils from preschool to secondary school age). It felt arbitrary to enforce criteria based on publication date, because SRL in the context of teachers’ understanding, beliefs and pedagogical promotion is a relatively new field, therefore no exclusion criteria based on publication date was deemed necessary. Similarly, worldwide publications were included in an attempt to gain a broad enough coverage of a developing field. For Sections 1 and 3 (i.e., the narrative components of the literature review), further literature was selected through complementary manual searches of reference lists from those articles included in the scoping review of the literature, and use of grey literature to help contextualise the area of study, following a ‘backwards snowballing’ technique (Wohlin, 2014). I acknowledge that relevant literature may have been ‘missed’ due to the strategy I adopted, however it was important to ensure that the number of articles included was manageable; when engaging in research, a decision has to be made regarding what information is gathered whilst acknowledging time and resource constraints (Robson & McCarten, 2016). I also acknowledge that the narrative components of the literature review depended on my own subjective selection of particular articles, however due to the critical stance I adopted, and transparent reporting of the process of the literature review, I feel I was able to present a balanced review of the literature to the best of my ability within the (time and resource) constraints afforded.

2.3 Ontological, Epistemological, Methodological and Design Considerations

My research experiences during my undergraduate and master's level degrees were predominantly based upon the positivism paradigm which relies on quantitative methods to generate explanatory associations or causal relationships (Park et al., 2020). My experiences during my undergraduate and postgraduate studies until this course reflects Braun and Clarke's (2013) assertion that "qualitative methods are typically allocated far less time on the curriculum than quantitative methods" (p. 9). During my training I have been able to explore a variety of paradigms and philosophical standpoints which has helped me to develop as a researcher (and a practitioner) and consider the complexities of research and therefore think more deeply about how decisions made during the research process will affect the knowledge generated. For example, I have learned that whereas positivists aim to develop knowledge objectively without the values of the researcher influencing its development (Park et al., 2020), Big Q research views knowledge as being situated and shaped by the researcher (Braun & Clarke, 2022; Finlay, 2002; Gough, 2017). I have also learned that different paradigms vary along a spectrum of whether researcher subjectivity is seen as a resource or as a bias (Braun & Clarke, 2022).

Prior to completing my thesis, I had always felt that when conducting research, the starting point is defining your ontological and epistemological standpoints and this decision henceforth rigidly dictates all subsequent decisions relating to your research design, methodology etc. However, when I was struggling to recruit participants to take part in interviews, after weighing up the 'pros and cons' of the options I had (see Table 14 below), I decided to add an additional data collection method (i.e., for the purposes of 'participant enrichment – a rationale which combines methods to optimise the study sample by improving recruitment [Collins et al., 2006]) by constructing a questionnaire. This made me question the way I viewed the research process – I was now changing my design and going back (in the other direction) to choose an ontological and epistemological position which would 'fit' with the decision to change my methodology I had felt I had to make.

Originally, I sought to answer the research questions by thematically analysing semi-structured interview data alone. A qualitative paradigm stemming from the idealist outlook (Deshpande, 1983; Sale et al., 2002) was originally the basis for this research. This idealist ontological view and subjectivist epistemological standpoint (see Smith, 1983; Slevitch, 2011) was no longer appropriate when I changed my research design to also collect questionnaire data which included quantitative data being collected. This decision was made, partially, because I felt participants were more likely to complete a questionnaire that would take less time and effort than writing paragraphs of text to respond to open-ended questions (indeed, Qualtrics reminds you of this when you design a survey using their platform), and I was rather 'desperate' to recruit some participants. If I had intended to use the questionnaire to collect only qualitative data (i.e., only asking open-ended questions), this would have constituted a multimethod research design and I would have been able to continue my research journey with a qualitative paradigm: "multimethods do not have the same paradigmatic problem as do mixed methods since they can adopt the paradigm appropriate to the single type of data being collected" (Hall, 2013; p. 1).

Fortunately, when I read more about critical realism, I felt that it gave me more 'freedom' to have the 'best of both worlds' in adopting a mixed-methods design affording the collection of both quantitative and qualitative data. Critical realism is compatible with a wide range of research methods (Sayer, 2000) and recognises the complexity of social phenomena; furthermore, it acknowledges the role of values and interpretive meaning whilst still legitimising a degree of 'explanation' to be a goal of social research (Hall, 2013). Once I adopted critical realism as a philosophical standpoint, I was able to look at my research through this new lens and I no longer needed to use 'participant enrichment' as a justification for using a mixed-methods research design. From this point forwards, I ensured that all the decisions I made aligned with my philosophical standpoint (see Figure 20).

Table 14

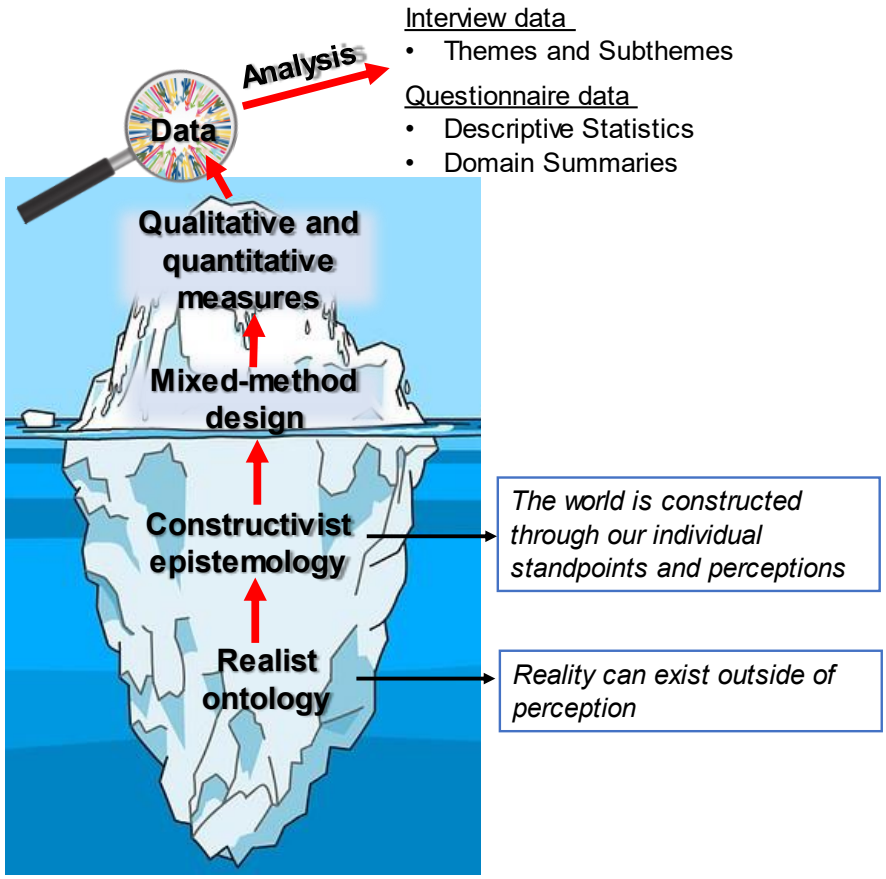
Weighing up Pros and Cons to add a Questionnaire

	Collect only (semi-structured) interview data	**Add a questionnaire collecting only qualitative data**	**Add a questionnaire collecting both quantitative and qualitative data**
Pros	Interviews provide rich and detailed data about individual experiences and perspectives (Braun & Clarke, 2013). I felt that the original research design was valuable because, as highlighted by Dignath et al. (2013), most of the research exploring teachers' promotion of SRL has been based on teacher questionnaires. It has been suggested that research utilising interviews conducted with teachers could provide a deeper insight into teachers' thinking (Dignath et al., 2013)). Indeed, of the 32 studies included in the scoping review of the literature, 22 (68.75%) used questionnaires to gather data, with 17 (53.12%) of all studies collecting only questionnaire data.	Asking only open-ended questions would potentially allow for gathering richer data. This would also mean that the original philosophical standpoint could be used, and the research design would become 'multimethod'.	It is reported that closed-ended questions are substantially faster for participants to complete, lead to lower drop-out rates, allow for more questions to be asked on a broader range of topics in a particular timeframe, and collect data that is 'easier' to analyse (Desai & Reimers, 2019; Hyman & Sierra, 2016; Qualtrics, 2022). Using some open-ended questions alongside closed-ended questions may address some of the limitations of closed-ended questions (e.g., no in-depth responses), and vice-versa.
Cons	Recruiting two participants between June and July 2021 didn't bode well for recruiting 8-12 participants by the end of September.	Desai and Reimers (2019) found that drop-out rates increase when participants completing web-based research have to give open-ended responses. They suggested that participants "dislike typing open-ended responses, to the extent that	Collecting quantitative data may reduce the complex experiences and perceptions of participants. This would also require a change to the philosophical standpoint.

		they choose not to participate" (p. 1437) or the devices used by participants cause them to struggle to provide open-ended responses. Responding to open-ended questions also takes more time than responding to closed questions. Qualtrics (2022) report that their data indicates that surveys longer than 12 minutes (and 9 minutes on mobile) start to see substantial levels of respondent break-off. Qualtrics (2022) also report that "once a survey has more than three open-text boxes, we find that, on average, completion rates begin to decline and respondents start writing a lot less text in their responses" (p. 1).	
Decision	This did not feel like an option. I decided I could not risk not having enough participants.	I felt that this was a potential option, however I felt that due to the complex and multi-faceted nature of the concept of SRL, and of measuring understandings, beliefs and practices, a lot of questions would need to be asked and this may lead to a high drop-out rate and therefore this risked not recruiting enough participants.	I felt that this was the best option, and after doing more in-depth reading around critical realism as a philosophical standpoint, I felt that the addition of a questionnaire collecting both quantitative and qualitative data would be a practical and an appropriate measurement for addressing my research questions.

Figure 20

Research Design (Presented via the Iceberg Model)



In Part 2 of my thesis, I described how methodological triangulation was employed for the purposes of confirmation and completeness (Risjord et al., 2001, 2002). Reflecting on this and having read critiques of using triangulation as a rationale for mixed-methods research (e.g., Sale et al. [2002] argue that due to the fundamental differences in the assumptions behind quantitative and qualitative methods, they can never study the same phenomenon, they instead can study multiple *related* phenomena), I wonder whether complementarity would have been a better rationale. Complementarity is used to increase the interpretability and meaningfulness of results by elaborating, enhancing, illustrating, and clarifying the results from one method with the results from the other method (Greene et al., 1989). In the case of my research, complementarity would have allowed for the quantitative methods to describe general trends about variables, and qualitative methods to illustrate the

details of those trends (Plano Clark & Ivankova, 2016). Regardless, for the purpose of the current research, I agree with Morgan's (2014) assertation that "projects that collect both qualitative and quantitative data so that using the combined strengths of qualitative and quantitative methods will accomplish more than would have been possible with one method alone" (p. 13).

2.4 Data Collection, Analysis, and Interpretation

2.4.1 Decisions Made During Data Analysis – Reflexive Thematic Analysis

During data analysis, initial coding was often semantic, however as my analysis developed, it was easier to generate latent-level codes. Deductive and inductive orientations to data coding is more a spectrum than a dichotomy (Braun & Clarke, 2022). Whilst I wanted to hold an inductive orientation as this fits well with investigating perspectives and experiences (Braun & Clarke, 2022), aspects of a deductive orientation were also beneficial as they provided a lens to interpret and make sense of the data. For example, for research question 1 (teachers' understanding of the term SRL), aspects of a deductive orientation were useful to determine whether teachers were discussing the key components of SRL as outlined in the literature. Conducting the literature review also meant that I had in some way been 'prompted' or 'primed' to notice or pay more attention to things which made sense to me due to a certain familiarity – I actively produced the themes, rather than 'noticing' themes that were emerging. Braun and Clarke (2022) highlight that knowledge generation is inherently subjective and situated. Furthermore, Braun and Clarke (2019) asserted that

> qualitative research is about meaning and meaning-making, and viewing these as always context-bound, positioned and situated, and qualitative data analysis is … something that is active and generative … themes do not passively emerge from data… (p. 591)

My data analysis was underpinned by my own interpretation of theoretical assumptions and if a different researcher had analysed this data they might have produced (likely similar, but)

different themes, even having made the same decisions when choosing whether to code semantically/latently or hold an inductive/deductive orientation: “we always shape the analysis, no matter how we approach coding” (Braun & Clarke, 2022; p. 58).

2.4.2 Decisions Made During Data Analysis – Domain Summaries

Domain Summaries differ from themes as they are organised around a shared topic, but not shared meaning (Braun & Clarke, 2019) and provide a summary of everything the participants said in relation to a particular topic or interview question and capture the range of responses (Braun & Clarke, 2022). The process of creating Domain Summaries followed a six-step process similar to the process used for the Reflexive Thematic Analysis. Due to limited information being available regarding creating Domain Summaries (I considered using the steps outlined by Atkinson & Haj [1996], however these steps were designed specifically for analysing interview data), I adapted Braun and Clarke’s (2022) six-step process to ensure rigour when creating domain summaries and to ensure I remained reflexive whilst creating them. There were fundamental differences, particularly because in thematic analysis, candidate themes may be discarded, whereas when creating Domain Summaries, you are aiming to capture the *range* of responses. I also decided to utilise quantitative data when creating Domain Summaries, by highlighting the percentage of participants who contributed to each sub-domain (this is very different to Thematic Analysis). I felt that this was in line with my rationale for a mixed-methods design as this was adding additional information that could not be obtained if using only Thematic Analysis for qualitative data. If I had chosen to use Reflexive Thematic Analysis to analyse the qualitative survey data, undoubtedly, this would have changed the knowledge that was generated through data analysis. Triangulating data from multiple sources provides a more comprehensive portrait of teacher beliefs, knowledge and practice, including differences that emerge among the various measures (Spruce & Bol, 2015). I felt that Domain Summaries would be able to add more information about the *range* of responses participants gave,

something which is more challenging to achieve with Thematic Analysis (indeed, this is not its aim).

2.5 Ethical Considerations and How These Were Addressed

Ethical approval for this study was granted by Cardiff University School of Psychology Ethics Committee. This research adhered to the University's ethical guidelines, the British Psychological Society's Code of Human Research Ethics (BPS, 2021) and the British Educational Research Association's Ethical Guidelines for Educational Research (2018). A summary of the key ethical considerations is presented in Appendix 20. Each method used (i.e., the interview and survey) was considered separately as they involved different processes in recruiting participants and collecting data, therefore different ways of addressing the ethical considerations (informed consent, confidentiality and anonymity, right to withdraw, risk of harm, debriefing, and General Data Protection Regulations [GDPR]) was required.

Throughout data analysis I maintained an ethical awareness in terms of my responsibility to participants in representing their 'voice'. I considered the power dynamics here, and ensured I remained reflexive throughout the process of data analysis and when reporting (writing up) the results. Willig (2017) highlighted that "the process of interpretation poses significant ethical challenges because it involves a process of transformation" (p. 282). Furthermore, the British Psychological Society (2018) highlights our professional obligation to protect people from harm through the misuse or misrepresentation of our research. If I were to conduct similar research in future, I would be interested in using participatory research methods as this may help to address this issue, as well as providing an arguably deeper insight into participants' thinking. Whilst requiring more resources, involving participants in analysis can "give voice to people and further understanding of thoughts and behavior of groups which has benefits for theoretical and policy development" (Ride, 2015, p. 199). The use of participatory research methods is discussed further in Part B below (section 3.2, p. 154).

3. Part B: Contribution to Knowledge and Dissemination

3.1 Contribution to the Literature

SRL is a sophisticated field with well-established theoretical frameworks (Lawson et al., 2019). Research in the area of SRL has "grown to occupy significant territory in the fields of education and psychology" (Winne, 2017; p. 9), with a plethora of research demonstrating the impact of the effective teaching and use of SRL strategies on pupils' achievement (e.g., Bjork et al., 2013; Dunlosky et al., 2013; Sutton Trust-Education Endowment Foundation [EEF], 2021; Hattie, 2009; Schunk & Greene, 2018; Winne, 2018) and the crucial role teachers play in children's SRL development (Boekaerts 1997; Dignath & Büttner, 2008; Moos & Ringdal, 2012; Perels et al., 2009; Stoeger et al., 2014). However, as highlighted in Part 1 of this thesis, evidence-based practice is at risk of reductionism: features and contexts are important, and there may be a focus on outcomes at the expense of insights into the mechanisms involved in the processes of change (Cline et al., 2015). Teachers' beliefs and knowledge directly affect their classroom practices (Calderhead, 1991; Pajares, 1992; Woolfolk et al., 2006). In the context of SRL-supportive approaches specifically, it has been highlighted that these should be investigated and contextualised in relation to teachers' beliefs and practices, yet are seldom explored in research (e.g., Alvi & Gillies, 2020).

Part 1 of my thesis makes a valuable contribution to the SRL literature. "Literature reviews have great potential for informing practice and public policy and sit at the top of hierarchies of evidence" (Siddaway et al., 2019; p. 4). Knowledge generated from the literature review also highlights the range of methodologies and measures which can be used to investigate this area in future. With regards to Part 1 of this thesis, Section 1 contained a 'theoretical review', using a narrative approach (exploring key terminology, theory and the relevance of the field of SRL to Educational Psychologists [EPs] etc.), Section 2 contained a scoping review of the literature (conducted on research investigating teachers' understanding of SRL, beliefs about SRL and pedagogical promotion of pupils' SRL) and Section 3 returned to using a narrative style to provide the rationale for the current research

with subsequently developed research questions. Reflecting on my choices here, they arguably sit well within the philosophical standpoint of my research (critical realism). With regards to conducting research, critical realism argues that the choice of methods used should be dictated by the nature of the research problem (McEvoy & Richards, 2006). Viewing my 'research problem' here as being conducting a Literature Review, I opted for using a mixed-methods approach. Furthermore,

> given that review and synthesis are central to good scientific and clinical practice, and that a grasp of the current state of knowledge is a prerequisite to designing new studies, it is pertinent to ask which reviews are most likely to fulfil the needs of readers. (Collins & Fauser, 2005; p. 103)

There were many benefits to using both approaches in terms of their contribution to the literature; these are summarised in Table 15 below:

Table 15

Benefits to Including both a Narrative Approach and a Scoping Review of the Literature

Benefits of including a scoping review of the literature	**Benefits of including sections using a narrative approach**
Scoping reviews are systematic, aim to be transparent and reproducible, include steps to reduce error and increase reliability, and ensure data is extracted and presented in a structured way (Munn et al., 2018). I felt that the scoping review allowed me to present a clear and comprehensive overview of previous research on my topic (Munn et al., 2018). It enabled me to pinpoint gaps in the literature, identify	The aim of this review was not to present an interrogation of the literature pertaining to SRL in general, rather, it was to document a scoping review of the literature, conducted on research investigating teachers' understanding of SRL, beliefs about SRL and pedagogical promotion of pupils' SRL. However, as highlighted by Collins and Fauser (2005), prescribed methods and a narrow focus when conducting a literature review do not allow for comprehensive coverage. Therefore, a

previous methodological issues, and any patterns across studies (Munn et al., 2018). On reflection, I also wonder whether I also selected this approach because following this format (where strict guidelines and steps are given [see Tricco et al., 2021]) gave me an element of 'structure' in what felt like a daunting task (writing a 10,000-word literature review).	'primer' was needed to introduce the concept of SRL, and by using a narrative approach, I was able to synthesise relevant publications in a useful and practical manner for readers; providing a broad overview of the key information directly related to the specific area of focus within this research project.

With regards to part 2 of my thesis, the current research was small-scale and exploratory. It builds on and extends the existing literature exploring teachers' understandings, beliefs and pedagogical promotion of SRL. In addressing the limitations outlined in previous research, this (to my knowledge) is the first piece of research in this area to investigate teachers in English and Welsh contexts, making it innovative. Findings from the scoping review of the literature revealed that over half (53.12%) of previous research in this area collected questionnaire data alone. My research utilised a mixed-methods research design, conducting both a survey and semi-structured interviews, therefore enabling the collection of both quantitative and qualitative data. This research therefore integrated detailed yet varied perspectives.

This research represents data collected from a small sample size (98 survey participants and 5 interview participants). As exploratory research, the aim was not to be able to generalise findings to the populations of teachers in England and Wales, however this research may offer some transferability. Braun and Clarke (2022) assert that where a researcher describes the specific context, participants, settings, and circumstances of the study, the reader can evaluate the potential for applying the analysis to other contexts and settings. It is acknowledged that the burden of determining transferability is therefore placed on the reader (Braun and Clarke, 2022).

Many aspects of the current findings were consistent with previous research, summarised in Table 16 below:

Table 16

Key Findings in Relation to Previous research

Key Findings	**In line with research by**
There was variability in participants' understanding of the term SRL, with some participants holding misconceptions.	Dignath and Sprenger (2020)
Participants held positive beliefs about SRL (e.g., for building confidence and becoming a lifelong learner).	De Smul et al. (2019), Geduld (2019), Heirweg et al. (2021), Huh and Reigeluth (2018), Karlen et al. (2020), Mahendiran and Kumar (2017), Soliman and Alenazi (2017), Spruce and Bol (2015), Yan (2018)
Participants described their beliefs regarding how pupils' characteristics (within-child factors) such as age, gender, communication skills and neurodevelopmental differences would determine the extent to which pupils can achieve SRL.	Peeters et al. (2016), Spruce and Bol (2015), Thomas et al. (2020)
Participants noted many systemic factors that would influence teachers' abilities to be able to promote pupils' SRL skills, including: • The support of colleagues • The support of member of Senior Leaderships Teams (SLT) • The support of wider organisations (Local Authority, Government) • The need for a whole-school approach	Alvi and Gillies (2020), De Smul et al. (2020), Geduld (2019), James et al. (2007), Thomas et al. (2020)

Participants highlighted the need for collaboration between teachers and receiving training in this area, if they were to adopt this approach.	De Smul et al. (2020)
Whilst participants generally agreed with the concept of supporting their pupils to become self-regulated learners, many of them lacked the confidence to do so.	Dignath and Buttner (2018), Dignath et al. (2013)
Participants described how encouraging pupils to reflect on their learning was important (this is one way in which teachers promote pupils' SRL skills).	Alvi and Gillies (2015), Alvi and Gillies (2021), Chatzistamatiou and Dermitzaki (2013), Spruce and Bol (2015)

This research is arguably a timely contribution, given that the new Curriculum for Wales (Welsh Government, 2020) emphasises the importance of metacognition and self-regulation (aspects of SRL), and given the EEF's fairly recent guidance report *Metacognition and Self-Regulated Learning* in 2018. This research has also presented a rationale for the role of EPs in the area of SRL. This is further discussed in more detail with reference to the key findings of the research (see Table 18 below). From a more general standpoint, the field of SRL is relevant to EPs because EPs provide a link between academic psychology and education (Elliot, 2000) and the role of the EP encompasses assessing evidence bases of different psychological and learning theories and approaches (Cline et al., 2015). Given the large body of research demonstrating the impact of the effective teaching and use of SRL strategies on pupils' achievement (e.g., Greene et al., 2015; Hattie, 2009; Perry et al., 2015), and that EPs are committed to improving outcomes for children and young people (Cline et al., 2015), the field of SRL appears particularly relevant to EPs in England and Wales. This research, if appropriately disseminated, may encourage thinking and conversations around more widespread promotion of SRL in the contexts of English and Welsh education settings.

It could be argued that this research has gone beyond the level of 'just' SRL and may highlight general perceived barriers for teachers in adopting novel approaches or initiatives: teachers in this sample (with reference to SRL) emphasised the importance of support from

colleagues and SLT, and the need for whole-school approaches in increasing their confidence here.

3.2 Contribution to Further Research

It is acknowledged that the current research has several limitations which may represent avenues for future research, summarised in Table 17 below:

Table 17

Limitations of the Research and Associated Directions for Future Research

Limitation	Direction for future research
The current sample represents a small number of teachers (98 survey participants and 5 interview participants).	Future research could utilise a larger sample size to investigate teachers' perceptions of supporting SRL to enable generalisability or greater transferability of findings to teaching populations in England and Wales.
This research collected data generated solely from self-report instruments. It has been argued that self-report measures (i.e., semi-structured interviews and surveys) are useful in terms of shedding light on the *perceptions* of individuals' behaviour, however they cannot map the individual's *actual* behaviour (Heirweg et al., 2021). Furthermore, previous research in the context of SRL has found that teachers' self-reports of their promotion of SRL do not necessarily correlate with classroom observations of	Future research could combine self-report measures with observations to aid the identification of teachers' actual strategy use; classroom observations have been argued to be able to provide more suitable ways to capture teachers' instructional practice to support SRL (Butler, 2002; Perry et al., 2002). Combining these with artefacts (e.g., lesson plans, pupils' schoolwork) may add another dimension and depth to these investigations. Therefore, capturing overt behaviour via observations, and underlying mental processes via self-report measures (Veenman & van Cleef, 2019) may offer a more balanced picture. Case studies offer a rigorous and comprehensive frame of inquiry, allowing researchers to conduct in-depth investigations within natural settings (Alvi & Gillies, 2020). Furthermore, longitudinal research looking at

teachers' SRL instruction (e.g., Dignath & Büttner, 2018).	teachers' perceptions and practices over time may provide a more holistic view, as cross-sectional designs are only able to provide a snapshot of one point in time.
Although this research included teachers with a broad range of demographics, no analysis was made with reference to these differences.	Exploring differences between teachers according to their demographic variables (e.g., years' teaching experience, age of pupils taught etc.) may illuminate factors which have an impact on or contribute to teachers' understanding, beliefs and practice.

In addition, participatory research methods may be particularly valuable in future research in this area. Participatory methodology can be conceptualised as an "orientation to inquiry" (Reason & Bradbury, 2008; p. 1). As highlighted by Bergold and Thomas (2012), this type of research process fosters the convergence of two perspectives: science and practice, helping both to develop an understanding for each other. This type of research would be valuable as it could involve teachers in the knowledge production process, and arguably may offer a more ethical way to represent the voices and practices of education staff. Action research approaches can encompass participatory research methods, and this is reflected in the labelling of various approaches (Bergold & Thomas, 2012), e.g., participatory action research, co-operative inquiry, participatory learning and action etc. EPs could promote the use of action research in schools where staff are invested in seeking to implement an SRL approach. Another possibility would be to use an Appreciative Inquiry model.

This research may provide an illustrative example of how mixed-methods research can approach exploring teachers' understandings, beliefs and pedagogical promotion of different approaches and initiatives in general. This research has highlighted that as scientist-practitioners (Cline et al., 2015) who work closely with education setting staff and are knowledgeable about the education system (Association of Educational Psychologists [AEP], 2021), EPs appear well placed to investigate teachers' perceptions of supporting SRL; this could arguably be extended to investigating teachers' perceptions of other

approaches and initiatives. This is important because evidence-based practice is at risk of reductionism: features and contexts are important, and there may be a focus on outcomes at the expense of insights into the mechanisms involved in the processes of change (Cline et al., 2015). Educational research should take into account teachers' beliefs and knowledge as these inform their classroom practices (Calderhead, 1991; Pajares, 1992; Woolfolk et al., 2006).

3.3 Plans for Dissemination of Findings

As agreed with the participants who took part in semi-structured interviews, a written summary of the research will be shared with them. This written summary will include information from both the literature review and the research journal article so that participants, if they wish, can fully consider the findings and possible implications for their practice.

I feel that integrating the findings from my thesis (both Part 1 and Part 2) into training for those within the EP profession and for school staff (e.g., initial teacher training, twilight sessions for schools) would be valuable. This would highlight the application of psychology and the potential benefits of SRL and possible barriers to its promotion. It may be pertinent to work with other researchers and organisations in developing these trainings, for example by making links with those who worked on developing the EEF's (2018) guidance report *Metacognition and Self-regulated Learning*.

When I begin my new role as an Educational Psychologist in a Local Authority in September, I plan to discuss my thesis with colleagues and consider how I can apply the knowledge I have produced. For example, I could query whether schools would be interested in learning more about SRL (e.g., a cluster of schools putting some EP time in an 'SRL pot' for training and working groups). My research suggests that schools would need to be invested and implement the promotion of SRL as a whole-school approach, therefore the

starting point would be having conversations with school staff during planning meetings to determine whether this type of work would be feasible (and deemed useful).

In addition, I have recently made a playlist on Hwb (towards the end of my final year placement) for schools in that particular Local Authority to access to learn more about SRL. The playlist contains signposting to the EEF's (2018) guidance report and is informed by my literature review.

I will also take what I have learned throughout the research process, and the findings of my research, into my practice as an EP. I aim to share these informally with colleagues as well as school staff that I work with in future, particularly if an interest is shown by others in this area.

Publication of the research will be an important process in disseminating the results and allowing a wider audience to be reached. This research will likely be valuable to EPs, education setting staff such as teachers, and educational researchers. However, given that submission to a peer-reviewed journal generally means that the content is not published or submitted for publication elsewhere (i.e., 'duplicate'/'redundant' publication), it would only be possible to submit to a single academic journal to present the findings from the research. I feel that this research (i.e., Part 2 of the thesis) would be best placed by being published in an academic journal which is widely accessible to EPs. I will also consider preparing an opinion piece / position paper or commentary article to present findings from the literature review (i.e., Part 1 of the thesis) in a similar journal. Possible academic journals include *Educational Psychology in Practice* or the *British Journal of Educational Psychology*. I could extend this work to include a position paper to further develop the current literature base with reference to SRL in the English and Welsh school contexts, considering overlaps with the curriculum and current initiatives.

3.4 Contribution to Professional Practice

Findings from the current research highlighted a range of issues relevant to the EP role in this area. The key findings of this research and their implications for professional practice are summarised in Table 18 below:

Table 18

Key Findings and Implications for Practice

Key Finding	Implications for Practice
Participants in this sample emphasised the need for high quality training and continuous professional development in promoting SRL.	EPs promote psychology within education settings (AEP, 2021), and to facilitate change, the role of the EP requires working at multiple levels with a range of other professionals. EPs can provide training and develop the skills of others such as teachers (Cline et al., 2015; AEP, 2021). Therefore, EPs are arguably in an ideal position to provide training to school staff seeking to promote their pupils' SRL skills. If education settings wanted to prioritise implementing an SRL approach, the knowledge and skills of EPs would allow them to work with Headteachers and/or other members of the SLT to create bespoke training packages for individual schools or school clusters, or create generic training where schools can then adapt recommendations to suit their individual organisation's needs.
Participants noted that a whole school approach was needed to increase their confidence in promoting SRL, and in facilitating them to support pupils' SRL. Participants also highlighted the importance of support from colleagues and SLT.	EPs could have a role in facilitating the setting up of working groups within and between schools to share best practice in promoting SRL. Previous research has shown that the establishment of dialogue and discussion, and / or the opportunity to share ideas as a community, is a key component in teacher learning (Shulman & Shulman, 2004). In addition, the opinions and experiences of colleagues within their own and other schools is used by teachers when making decisions about which teaching approaches to adopt (Greany & Brown, 2017; Nelson et al., 2017; Walker et al., 2019).

Participants generally held positive beliefs about SRL and could demonstrate some understanding of the term and how to promote SRL in their pupils.	This, in conjunction with the publication of guidance aimed at teachers to promote SRL (e.g., EEF, 2018) and an emphasis of aspects of SRL in the curriculum (Welsh Government, 2020) offers the possibility that EPs could promote the use of action research in schools where staff are invested in seeking to implement an SRL approach. This is because EPs provide a link between academic psychology and education (Elliot, 2000) and the role of the EP encompasses assessing evidence bases of different psychological and learning theories and approaches (Cline et al., 2015).
Participants highlighted that support from wider organisations (Local Authority, Government) would increase their confidence in promoting pupils' SRL.	EPs promote psychology within wider systems such as Local Authorities (AEP, 2021). As noted by Beaver (2011), change does not always require more in terms of resources: it usually requires new approaches and strategies to enhance educational and developmental opportunities. The outcomes of action research in schools promoting pupils' SRL skills could help inform educational policy. As professionals who engage in work at strategic levels, EPs may have a role in contributing to this area.

4. Concluding Reflections

I hope that this critical appraisal helps in providing a degree of transparency for the reader and offers another lens through which to view my research. Writing this critical appraisal has helped me to consider the different avenues my research journey could have taken; it has suggested the possibilities of different outcomes had I made different decisions along the way.

I have further developed several skills throughout the research process. Whilst this experience has been incredibly stressful at times, overall, I have enjoyed completing this piece of research. Each stage of the research process has presented challenges which have encouraged me to think more deeply about my topic of interest, ethics, philosophies, and implications of the decisions being made. It has offered me the opportunity to develop as a practitioner, as well as a researcher. In practice, whilst I am often working in a solution-

focused way, when undertaking both individual and systemic casework, problem-solving requires gathering information from multiple sources and triangulating this. The formulation and knowledge 'produced' from this process is dependent on the approaches used to gather information (e.g., the approach[es] adopted [humanistic, constructivism, systems etc.], the assumptions of the practitioner, the framework used (e.g., a psychological problem-solving framework such as the Constructionist Model of Informed and Reasoned Action). Developing as a researcher has helped me to reflect on how the knowledge produced (e.g., formulations informing 'agreed actions' or recommendations) in my practice is determined by the way I approach and conduct my individual and systemic casework, and the decisions I make (with and without others) throughout the process.

In my practice, I often discuss, explain, and/or provide training on strategies, approaches or interventions school staff might use to support their learners; these are sometimes novel to school staff. As a result of conducting this research I feel I have developed a greater appreciation for the possible barriers school staff (such as teachers) face when implementing novel approaches. I will remain mindful of this in my practice and consider encouraging teachers to 'link up' (e.g., through creating working groups) if implementing similar initiatives or a novel approach in their school.

I am very grateful that I was able to recruit participants for my research. Since first recruiting participants from June 2021, I have lost count of the number of studies I have volunteered for (for fellow trainee EPs, PhD students, Master's students etc.) as I know how it feels to worry whether you'll have enough participants for your research in order to graduate! I will continue taking part in research throughout my career to support other trainees and students, as well as to contribute to the ever-growing knowledge base needed for best practice.

This process has enhanced my enthusiasm for research (although I welcome a short break), and I hope to return to researching this topic further in future. The current research provides some initial exploratory findings regarding teachers' perceptions of supporting SRL

in the Welsh and English education contexts. I feel that this is a valuable area to research. I look forward to applying research and theory in my practice and hope to contribute to the profession with my own research throughout my career.

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APPENDICES

List of Appendices

Appendix 1: Search Strategy

<table>
<tr><th>Database</th><th>Search Terms</th><th>Total Results</th></tr>
<tr><td>APA PsycInfo</td><td>
<table>
<tr><th>#</th><th>Query</th></tr>
<tr><td>1</td><td>teacher*.mp.</td></tr>
<tr><td>2</td><td>schoolteacher*.mp.</td></tr>
<tr><td>3</td><td>educator*.mp.</td></tr>
<tr><td>4</td><td>schoolm*.mp.</td></tr>
<tr><td>5</td><td>educationalist*.mp.</td></tr>
<tr><td>6</td><td>educationist*.mp.</td></tr>
<tr><td>7</td><td>pedagogue*.mp.</td></tr>
<tr><td>8</td><td>tutor*.mp.</td></tr>
<tr><td>9</td><td>1 or 2 or 3 or 4 or 5 or 6 or 7 or 8</td></tr>
<tr><td>10</td><td>Self-Regulated Learning/ or self regulated learn*.mp.</td></tr>
<tr><td>11</td><td>self regulating learn*.mp.</td></tr>
<tr><td>12</td><td>SRL.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]</td></tr>
<tr><td>13</td><td>10 or 11 or 12</td></tr>
<tr><td>14</td><td>underst*.mp.</td></tr>
<tr><td>15</td><td>view*.mp.</td></tr>
<tr><td>16</td><td>belie*.mp.</td></tr>
<tr><td>17</td><td>construct*.mp.</td></tr>
<tr><td>18</td><td>knowledge.mp.</td></tr>
<tr><td>19</td><td>self efficacy.mp. or Self-Efficacy/</td></tr>
<tr><td>20</td><td>concept*.mp.</td></tr>
<tr><td>21</td><td>assess*.mp.</td></tr>
<tr><td>22</td><td>attitude*.mp.</td></tr>
<tr><td>23</td><td>opinion*.mp.</td></tr>
<tr><td>24</td><td>perspective*.mp.</td></tr>
<tr><td>25</td><td>experience*.mp.</td></tr>
<tr><td>26</td><td>14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25</td></tr>
<tr><td>27</td><td>9 and 13 and 26</td></tr>
</table>
</td><td>804</td></tr>
<tr><td>SCOPUS</td><td>(((TITLE-ABS-KEY (teacher*)) OR (TITLE-ABS-KEY (schoolteacher*)) OR (TITLE-ABS-KEY (educator*)) OR (TITLE-ABS-KEY (schoolm*)) OR (TITLE-ABS-KEY (educationalist*)) OR (TITLE-ABS-KEY (educationist*)) OR (TITLE-ABS-KEY (pedagugue*)) OR (TITLE-ABS-KEY (tutor*)))) AND (((TITLE-ABS-KEY ("self regulated learn*")) OR (TITLE-ABS-KEY (srl)))) AND (((TITLE-ABS-KEY (underst*)) OR (TITLE-ABS-KEY (view*)) OR (TITLE-ABS-KEY (belie*)) OR (TITLE-ABS-KEY (construct*)) OR (TITLE-ABS-KEY (knowledge)) OR (TITLE-ABS-KEY (“self efficacy”)) OR (TITLE-ABS-KEY (concept*)) OR (TITLE-ABS-KEY (assess*)) OR (TITLE-ABS-KEY (attitude*)) OR (TITLE-ABS-KEY (opinion*)) OR (TITLE-ABS-KEY (perspective*)) OR (TITLE-ABS-KEY (experience*))))</td><td>1053</td></tr>
<tr><td>Web of Science</td><td>TS=(teacher* OR schoolteacher* OR educator* OR schoolm* OR educationalist* OR educationist* OR pedagogue* OR tutor*) AND TS=("self regulated learn*” OR srl) AND TS=(understand* OR view* OR belie* OR construct* OR knowledge OR “self efficacy” OR concept* OR assess* OR attitude* OR opinion* OR perspective* OR experience*)</td><td>901</td></tr>
<tr><td>EBSCO host ERIC</td><td>(teacher OR schoolteacher* OR educator* OR schoolm* OR educationalist* OR educationist* OR pedagogue* OR tutor*) AND ("self regulated learn*” OR srl) AND (understand* OR view* OR belie* OR construct* OR knowledge OR “self efficacy” OR concept* OR assess* OR attitude* OR opinion* OR perspective* OR experience*)</td><td>647</td></tr>
</table>

ASSIA	noft(teacher* OR schoolteacher* OR educator* OR schoolm* OR educationalist* OR educationist* OR pedagogue* OR tutor*) AND noft("self regulated learn*" OR srl) AND noft(understand* OR view* OR belie* OR construct* OR knowledge OR "self efficacy" OR concept* OR assess* OR attitude* OR opinion* OR perspective* OR experience*)	69

Appendix 2: Further Detail Regarding Excluded Articles

Further detail as to why articles / materials were excluded from the scoping review of the literature, with reference to a number of examples. *The number of examples provided reflect the number of articles excluded (0-5 exclusions = 1 example; 6-10 exclusions = 2 examples; 10+ exclusions = 3 examples).*

Full text articles excluded (as outlined in PRISMA Flow Diagram)	**Examples**		
Gathered data from University Lecturers or Teacher Educators (n = 2)	Ma, J. J. (2017). Using Formative Assessment to Facilitate Learner Self-Regulation: A Case Study of Assessment Practices and Student Perceptions in Hong Kong. *Taiwan Journal of TESOL, 14*(1), 87-118. This study investigated formative assessment practices used by one (higher education) college EFL writing teacher to facilitate learner self-regulation, and student perceptions of these practices in relation to self-regulation.		
Gathered data from student/trainee teachers (n = 2)	Randi, J. (2017). Teaching and learning hand in hand: Adaptive teaching and self-regulated learning. Teachers College Record, 119(13). This article presented case studies of two trainee teachers and their mentors who, without formal knowledge of self-regulation theory, established a classroom environment that promoted self-regulated learning.		
Teachers' understanding of SRL and / or beliefs regarding SRL and / or their pedagogical promotion of SRL not a significant focus of the research (n = 51)	De Smul, M., Heirweg, S., Devos, G., & Van Keer, H. (2020). It's not only about the teacher! A qualitative study into the role of school climate in primary schools' implementation of self-regulated learning. *School Effectiveness and School Improvement, 31*(3), 381-404. This study investigated the role of school climate, the SRL implementation history, and the role of the principal school leader in the school-wide development of SRL	Voskamp, A., Kuiper, E., & Volman, M. (2020). Teaching practices for self-directed and self-regulated learning: case studies in Dutch innovative secondary schools. *Educational Studies.* https://doi.org/10.1080/03055698.2020.1814699 This article presented a case study conducted to investigate how teachers at four Dutch secondary schools define self-directed learning	Armakolas, S., Mikroyannidis, A., Panagiotakopoulos, C., & Panousopoulou, T. (2016). A case study on the perceptions of educators on the penetration of personal learning environments in typical education. *International Journal of Virtual and Personal Learning Environments, 6*(1), 18-28. This paper presented a case study concerning Personal Learning Environments (PLEs). It aimed to investigate the perceptions of

	implementation as an educational innovation. A comparative analysis between 2 successful and 2 less successful schools as to the implementation of SRL was carried out.	and how they try to enhance it in their students.	educators about PLEs and their challenges in incorporating PLEs in their teaching practices.
Evaluated a professional development programme / intervention / teacher training (n = 25)	Heirweg, S., De Smul, M., Merchie, E., Devos, G., & Van Keer, H. (2021). The long road from teacher professional development to student improvement: A school-wide professionalization on self-regulated learning in primary education. *Research Papers in Education.* https://doi.org/10.1080/02671522.2021.1905703 This quasi-experimental pre-test-post-test study reported on a one-year school-wide professional development programme. The impact on teachers' SRL beliefs, self-efficacy, their SRL promotion behaviour and students' SRL competences and achievement scores were investigated.	Shamir-Inbal, T., & Blau, I. (2020). Micro-learning in designing professional development for ICT teacher leaders: The role of self-regulation and perceived learning. *Professional Development in Education.* https://doi-org/10.1080/19415257.2020.1763417 This study examined self-regulated learning processes, strategies and challenges in the context of a micro-learning, blended teacher professional development course for ICT leaders. The aim of the course was to further ICT school leaders' pedagogical-technological knowledge and practices.	Barr, S., & Askell-Williams, H. (2020). Changes in teachers' epistemic cognition about self-regulated learning as they engaged in a researcher-facilitated professional learning community. *Asia-Pacific Journal of Teacher Education, 48*(2), 187-212. This paper reports a 'micro-analytic study' with four secondary science teachers who undertook a 12-week researcher-facilitated Professional Learning Community.
Full text not available in English (n = 4)	Fernández, S. R., Jiménez, L. O., & Real, E. B. (2012). Percepciones del profesorado de educación infantil sobre sus propuestas de enseñanza en aprendizaje autorregulado. *Profesorado, 16*(1), 143-164.		
Secondary data source (n = 9)	Lawson, M. J., Vosniadou, S., Van Deur, P., Wyra, M., & Jeffries, D. (2019). Teachers' and Students' Belief	Scott, R. M., & Meeussen, N. (2017). Self-Regulated Learning: A Touchstone for Technology-Enhanced Classrooms. *Reading Teacher, 70*(6), 659-666.	

	Systems About the Self-Regulation of Learning. *Educational Psychology Review, 31*(1), 223-251. Not an empirical paper. Lawson et al. (2019) reviewed research on teacher and student beliefs and knowledge about SRL and described their paper as a 'theoretical reflection on this field'.	Not an empirical paper. This article described a hypothetical classroom of a third-grade teacher who promotes SRL, and offered examples of how teachers can promote SRL in their classrooms.
Articles reporting the development of a scale, checklist, observation schedule etc. (n = 7)	Steinbach, J., & Stoeger, H. (2018). Development of the Teacher Attitudes Towards Self-Regulated Learning Scale. *European Journal of Psychological Assessment, 34*(3), 193-205. This article described the development and validation of an instrument for measuring the affective component of primary school teachers' attitudes towards self-regulated learning.	Dorr, L., & Perels, F. (2018). A Multiperspective Approach to Assessing Preschoolers' Self-Regulating Ability. *Fruhe Bildung, 7*(2), 98-106. This study aimed to validate a rating scale with which caregivers (parents and kindergarten teachers) can assess self-regulated learning in young children by the age of 5-6 years.

Appendix 3: Critical Appraisal of the Included Studies

NB The studies are ordered historically to present findings in the order in which they appear in the literature (Siddaway, 2019).

Questions were answered with 'yes', 'no' or 'do not know', with further explanation if applicable.

Key

✓ = yes × = no ***?*** = do not know

Blue = quantitative design Orange = qualitative design Yellow = mixed-methods design

Key: **ATES** =Assessing How Teachers Enhance SRL observation instrument (Dignath et al., 2013); **SRLCI** = Self-Regulated Learning Contextual Influence Scale (Lombaerts & Engels, 2007). **SRLTB** = Self-Regulated Learning Teacher Belief Scale (Lombaerts et al., 2009); **TSES-SRL** = The Teacher Self-Efficacy Scale to Implement Self-Regulated Learning (De Smul et al., 2018); **SRLIT** = The Self-Regulated Learning Inventory for Teachers (Lombaerts et al., 2007).

Citation	**1. Was there a clear statement of the aims of the research?**	**2. Were the major theoretical concepts clearly explained and defined?** **Theoretical View (if stated)**	**3. Was the research design appropriate to address the aims of the research?**	**4. Were materials (e.g., questionnaires, observation schedules etc. adequately described?**	**5. Was the data analysis sufficiently rigorous?**	**6. Is there a clear statement of findings?**	**7. Are the interpretation of results and conclusions drawn in keeping with the results presented? (no over-claiming?)**
Lombaerts, Engels, & Vanderfaeillie (2007)	✓	✓	✓	✓	✓	✓	✓

Exploring Teachers' Actions to Promote Self-Regulated Learning Practices in Primary School		Zimmerman (1989, 2000)		<u>Questionnaire:</u> SRLIT	Clear outline of data analyses Compared averages on an item level and used multivariate analysis techniques		
Pauli, Reusser, & Grob (2007) *Teaching for understanding and/or self-regulated learning? A video-based analysis of reform-oriented mathematics instruction in Switzerland*	✓	✓ Social-constructivist conception of teaching and learning	✓	✓ <u>Observations:</u> Used aspects of an existing rating inventory (developed by MaxPlanck Institute of Education in Berlin, Germany) measuring various aspects of instructional quality. <u>Questionnaires</u>: adapted version of existing questionnaire (Staub & Stern, 2002), and questionnaire developed for the study.	✓ Clear outline of data analyses Multi-level structural equation modelling to analyse data.	✓	✓

Lombaerts, Engels, & Van Braak (2009) *Determinants of Teachers' Recognitions of Self-Regulated Learning Practices in Elementary Education*	✓	✓ Zimmerman (1989, 2000)	✓	✓ <u>Questionnaires</u>: SRLIT SRLTB SRLCI	✓ Clear outline of data analyses Descriptive statistics and path analyses used to analyse data	✓	✓
Krečič & Grmek (2010) *Teachers' Conceptions of Self-Regulated Learning - A Comparative Study by Level Of Professional Development*	✓	✓ Cognitive-constructive understanding of teachers' professional development Models of teachers' conceptions and how they influence practice	✓	✓ <u>Questionnaire:</u> developed for this study.	✓ Clear outline of data analyses Used statistical analyses (e.g., Kruskal – Wallis test for checking differences between groups of teachers)	? Presented only some of the results, notably, all results presented were statistically significant findings.	✓
Marchis (2011) *How Mathematics Teachers*	✓	× Did not state theoretical view(s) in	✓	× <u>Questionnaire:</u> developed for this study.	✓ Presented only descriptive statistics	✓	✓

Develop Their Pupils' Self-Regulated Learning Skills		detail; briefly outlined SRL with reference to Pintrich (1995, 2000) and Zimmerman (2001)		Did not give clear theoretical justification for specific questions (simply stated that questions were "formulated based on the theory of SRL and on the previous researches about teaching methods which develop students' SRL skills" [p. 10])	Presented only descriptive statistics		
Chatzistamatiou & Dermitzaki (2013) *Teaching mathematics with selfregulation and for self-regulation: Teachers' reports*	✓	✓ socio-cognitive cyclical model of self-regulated learning proposed by Zimmerman (2000).	✓	✓ <u>Questionnaires:</u> developed for this study.	✓ Clear outline of data analyses Confirmatory Factor Analysis and MANOVA to analyse data	✓	✓
Dignath, Dickhauser, & Büttner (2013)	✓	✓ Constructivist learning	✓	✓ <u>Observations:</u>	✓ Clear outline of data analyses	✓	✓

Assessing how teachers enhance self-regulated learning: A multiperspective approach		environment, and Boekaerts (1999)		Used the ATES to code observations. <u>Questionnaire:</u> Developed for this study, based on existing scales.	Statistical analyses including multilevel regression.		
Tanrıseven (2013) *Primary School Teachers' Realization Levels of Self-Regulated Learning Practices and Sense of Efficacy*	✓	✓ Zimmerman (1989, 2002)	✓	✓ <u>Questionnaires:</u> SRLIT Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk-Hoy, 2001).	✓ Clear outline of data analyses Correlational analyses	? Presented some findings in an unclear way, e.g., "According to another result yielded by the research, primary school teachers' sense of efficacy in students' engagement, teaching strategies, classroom management and general sense of efficacy is	✓

						at a quite efficient level" (p. 299). Due to terms such as "quite efficient" not being defined, was difficult to interpret certain findings.	
Alvi & Gillies (2015) *Social interactions that support students' self-regulated learning: A case study of one teacher's experiences*	✓	✓ Social constructivism (Vygotsky, 1962, 1978) and social constructionism (Gergen, 1982, 1995)	✓ Case Study	× <u>Interview and informal conversations:</u> Listed some examples of questions asked. <u>Observations:</u> No schedule / method described, however the researchers listed vaguely what they focused on during observations e.g., verbal interactions. <u>Students' artifacts</u>	*?* Specific methods of data analysis unclear (stated that data was analysed inductively but did not specify a 'type' of analysis e.g., thematic)	✓	✓

				e.g., work samples			
Kistner, Rakoczy, Otto, Kliieme, & Büttner (2015) *Teaching learning strategies: The role of instructional context and teacher beliefs*	✓	✓ Boekaerts (1999)	✓	✓ <u>Observations:</u> Used the ATES to code observations. <u>Questionnaire:</u> Developed for this study, based on existing scales.	✓ Clear outline of data analyses Analysed data using statistical analyses (correlations, MANOVA)	✓	✓
Spruce & Bol (2015) *Teacher beliefs, knowledge, and practice of self-regulated learning*	✓	✓ Zimmerman (2008)	✓	✓ <u>Interviews:</u> Interview protocol developed for this study and clearly outlined / described. <u>Observations:</u> Observation instrument developed for this study and clearly outlined / described. <u>Questionnaire:</u> Revised version of the SRLTB	✓ Clear outline of data analyses Descriptive statistics. Qualitative data was analysed inductively and deductively (did not specify a 'type' of analysis e.g., thematic)	✓	✓

Peeters, De Backer, Kindekens, Triquest, & Lombaerts (2016) *Teacher differences in promoting students' self-regulated learning: Exploring the role of student characteristics*	✓	✓ Zimmerman (2002)	✓	× <u>Semi-structured interviews:</u> Very few details provided, no examples of questions.	✓ Clear outline of data analyses Deductive strategies used to analyse data (did not specify a 'type' of analysis e.g., thematic)	✓	✓
Steinbach & Stoeger (2016) *How primary school teachers' attitudes towards self-regulated learning (SRL) influence instructional behavior and training implementation in classrooms*	✓	✓ Ziegler and Stoeger (2005) and Zimmerman (1989, 2000)	✓	✓ <u>Questionnaire:</u> Developed for this study, based on existing scales.	✓ Clear outline of data analyses, however post-hoc power analyses revealed low power for this study Hierarchical multiple regression analyses	✓	✓
Geduld (2017)							

Teachers' Perceptions of How They Develop Self-Regulated Learning	✓	✓ Zimmerman (2000)	✓ Case Study	✓ <u>Semi-structured interviews:</u> Developed for this study. <u>Observations:</u> Observation schedule developed for this study	× Specific methods of data analyses unclear.	✓	✓
Mahendiran & Kumar (2017) *Impact of self-regulated learning on teaching-learning process among teacher educators in Tiruvannamalai District*	✓ Primary aim was clear; however findings were presented which were not listed as aims of the research.	✓ Zimmerman (2002) and Zumbrunn et al. (2011)	× The research design did not appear to address the outlined aim of the research.	✓ <u>Questionnaire:</u> Developed for this study. Very little information given.	✓ Clear outline of data analyses Descriptive and inferential statistics (e.g., t-tests, ANOVA)	× Did not present findings in relation to the aim of the research, however presented findings related to demographic variables of teachers. Was difficult to understand / interpret findings. Findings	× Made huge claims, e.g., "The results of the study proved that there is a significant attitudinal difference among the teacher educators based on their gender and age group…" (p. 1631).

						were not related to previous research.	
Soliman & Alenazi (2017) *Primary Teachers' Beliefs and Knowledge about Self-regulated Learning in the Kingdom of Saudi Arabia*	✓	✓ Pintrich and Zusho's (2007) model	✓	✓ <u>Questionnaires:</u> Developed for this study.	✓ Clear outline of data analyses Correlational analyses and t-tests	✓	✓
Dignath & Büttner (2018) *Teachers' direct and indirect promotion of self-regulated learning in primary and secondary school mathematics classes – insights from video-based classroom observations*	✓	✓ Zimmerman (2000) and Boekaerts (1999)	✓	✓ <u>Semi-structured interviews:</u> Developed for this study. <u>Observations:</u> Used the ATES to code observations.	✓ Clear outline of data analyses Used a systematic coding scheme to analyse interview data (did not specify a 'type' of analysis e.g., thematic)	✓	✓

and teacher interviews							
Huh & Reigeluth (2018) *Online K-12 teachers' perceptions and practices of supporting self-regulated learning*	✓	✓ Pintrich (2004)	✓	✓ <u>Questionnaire:</u> Developed for this study.	✓ Clear outline of data analyses Descriptive statistics and ANOVA	✓	✓
Yan (2018) *How teachers' beliefs and demographic variables impact on self-regulated learning instruction*	✓	✓ Zimmerman (2001)	✓	✓ <u>Questionnaires:</u> SRLTB A questionnaire developed for this research.	✓ Clear outline of data analyses Hierarchical multiple regression analyses	✓	✓
Callan & Shim (2019) *How Teachers Define and Identify Self-Regulated Learning*	✓	✓ Zimmerman (2000)	✓	✓ <u>Questionnaire:</u> Questionnaire developed by the researchers containing open-ended questions.	✓ Clear outline of data analyses Deductive strategies used to analyse data (did not specify a 'type' of analysis e.g., thematic)	✓	✓

De Smul, Heirweg, Devos & Van Keer (2019) *School and teacher determinants underlying teachers' implementation of self-regulated learning in primary education*	✓	✓ The Job Demands-Resources model (Bakker & Demerouti, 2007) - providing a conceptual framework for possible determinants that are related to whether teachers do or do not implement SRL strategies.	✓	✓ <u>Questionnaires:</u> SRLIT SRLTB TSES-SRL	✓ Clear outline of data analyses Used Structural Equation Modelling	✓	✓
Geduld (2019) *A snapshot of teachers' knowledge and teaching behaviour with regard to developing self-regulated learning*	✓	✓ Specified a social cognitive perspective, however no reference to specific models of SRL.	✓	✓ <u>Semi-structured interviews:</u> Developed for this study.	✓ Clear outline of data analyses Content and thematic analysis.	✓	✓

Alvi & Gillies (2020a) *A Case Study of a Grade 7 Teacher's Perspectives and Practices Related to Self-Regulated Learning (SRL)*	✓	✓ Self-regulated learning strategy development model (Harris & Graham 1992)	✓	✓ <u>Semi-structured interview:</u> Developed for this study. <u>Observations:</u> Used an observation protocol developed for this study. <u>Contextual artifacts</u> e.g., digital pictures, task sheets	✓ Clear outline of data analyses Inductive and deductive analytical strategies (did not specify a 'type' of analysis e.g., thematic)	✓	✓
Alvi & Gillies (2020b) *Teachers and the Teaching of Self-Regulated Learning (SRL): The Emergence of an Integrative, Ecological Model of SRL-in-Context*	✓	✓ Employed a systems-ecological perspective (Bronfenbrenner, 1979) and proposed an integrative ecological model of SRL-in-context.	✓	✓ <u>Interviews:</u> Developed for this study. <u>Observations:</u> Used an observation protocol developed for this study. <u>Contextual artifacts</u> Not specified	✓ Clear outline of data analyses Inductive and deductive analytical strategies (did not specify a 'type' of analysis e.g., thematic)	✓	✓

Dignath & Sprenger (2020) *Can You Only Diagnose What You Know? The Relation Between Teachers' Self-Regulation of Learning Concepts and Their Assessment of Students' Self-Regulation*	✓	✓ Zimmerman (2000) and Boekaerts (1999).	✓	✓ <u>Interviews:</u> Developed for this study. <u>Questionnaire:</u> Developed for this study.	✓ Clear outline of data analyses Developed a coding framework in an inductive and deductive way (did not specify a 'type' of analysis e.g., thematic)	✓	✓
Geduld & Sikwanga (2020) *Juxtaposing South African and Namibian Teachers' Perceptions and Teaching Practices to Develop Self-Regulated Learning: Do They Practise What They Preach?*	✓	✓ Zimmerman and Moylan (2009)	✓	✓ <u>Semi-structured interviews:</u> Developed for this study. <u>Observations:</u> Used an observation schedule developed for this study.	✓ Clear outline of data analyses Used content and thematic analyses.	✓	✓

Karlen, Hertel, & Hirt (2020) *Teachers' Professional Competences in Self-Regulated Learning: An Approach to Integrate Teachers' Competences as Self-Regulated Learners and as Agents of Self-Regulated Learning in a Holistic Manner*	✓	✓ Introduced own theoretical framework	✓	✓ <u>Questionnaires</u>: A questionnaire was developed for this research, including sections of existing scales. An adapted version of the SRLTB.	✓ Clear outline of data analyses Used correlational and regression analyses	✓	✓
Peel (2020) *Everyday classroom teaching practices for self-regulated learning*	✓	✓ Presented an original synthesis *The SRL fundamentals*, based on an integration of social cognitive and	✓ Case Study	✗ <u>Semi-structured interviews:</u> Developed for this study. Very little information given. <u>Observations:</u> No schedule / method described,	✓ Clear outline of data analyses Used thematic analysis	✓	✓

		sociocultural perspectives.		described observations as "relatively unstructured" (p. 267).			
Saraç & Tarhan (2020) *Preschool teachers' promotion of self-regulated learning in the classroom and role of contextual and teacher-level factors*	✓	✓ Whitebread, et al. (2009)	✓	✓ <u>Questionnaires</u>: Teachers' Practices to Promote Self-Regulated Learning Scale (Adagideli et al.., 2015). Single-Dimension Self-Efficacy Beliefs Scale for Preschool Teachers (Tepe & Demir, 2012)	✓ Clear outline of data analyses Used ANOVA and linear regressions	✓	✓
Thomas, Peeters, De Backer, & Lombaerts (2020) *Determinants of self-regulated learning*	✓	✓ Systemic view - looking at teacher and school determinants of SRL promotion	✓	✓ <u>Questionnaires</u>: SRLIT SRLTB Developmental	✓ Clear outline of data analyses Used a multilevel random-effects model	✓	✓

practices in elementary education: a multilevel approach				Beliefs Subscale of the Beliefs about Primary Education Scale (Hermans et al., 2008) Additional scales measuring school innovativeness (Maslowski, 2001), teachers' participation in decision making (Geijsel et al., 2001) and SRL school policy (adapted from Vanderlinde & Van Braak, 2010).			
Alvi & Gillies (2021) *Promoting self-regulated learning through experiential learning in the early years of school: a qualitative case study*	✓	✓ Experiential Learning Theory (Kolb & Kolb, 2009) and SRL as cyclical phases (Zimmerman, 1990)	✓ Case Study	✓ <u>Semi-structured interviews:</u> Developed for this study. <u>Observations:</u> Followed protocol outlined in a previous study (Alvi & Gillies, 2020a). <u>Contextual artifacts</u>	✓ Clear outline of data analyses Employed a range of analytical strategies to analyse and interpret data, employing inductive and deductive strategies in a	✓	✓

				e.g., work samples, photographs	recursive and rigorous fashion		
Heirweg, De Smul, Merchie, Devos, & Van Keer (2021) *Do you reap what you sow? The relationship between primary school students' self-regulated learning and student, teacher, and school determinants*	✓	✓ Systemic view - looking at the role of school culture and reflective dialogue in the context of SRL implementation	✓	✓ <u>Questionnaires</u>: SRLIT SRLTB TSES-SRL Professional Community Index scale (Wahlstrom & Louis, 2008). SRL school vision (adapted from Vanderlinde & Van Braak, 2010).	✓ Clear outline of data analyses Analysed data using multilevel path analyses	✓	✓

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Appendix 4: Findings from the Studies Included in the Scoping Review of the Literature

NB The studies are ordered historically to present findings in the order in which they appear in the literature (Siddaway, 2019).

Key

Blue = quantitative design Orange = qualitative design Yellow = mixed-methods design

Citation	Context	Data Collection Methods and analyses	What does previous research tell us about what teachers understand by the term SRL?	What does previous research tell us about teachers' beliefs about SRL?	What does previous research tell us about how teachers support their pupils' SRL?
Lombaerts, Engels, & Vanderfaeillie (2007a) *Exploring Teachers' Actions to Promote Self-Regulated Learning*	Belgium 399 primary school teachers (76% female). Average 14.9 years' experience.	Questionnaire Compared averages on an item level and used multivariate analysis techniques.			Results indicated that the occurrence of teachers' reported SRL practices was limited. However, there were great differences between teachers. Teachers reported a clear gradual introduction of SRL over primary school stage levels.

Practices in Primary School					Teachers were found to promote SRL as a total concept with a comparable emphasis on all phases of the SRL process.
Pauli, Reusser, & Grob (2007) *Teaching for understanding and/or self-regulated learning? A video-based analysis of reform-oriented mathematics instruction in Switzerland*	Switzerland 79 secondary school teachers.	Lesson observations Questionnaires Multi-level structural equation modelling to analyse data.	Found a significant association for teachers' constructivist beliefs with teachers' provision of opportunities for independent problem-solving but not with teachers' provision of opportunities for SRL.	Found that a greater frequency of opportunities for self-regulated learning was accompanied by a change in teachers' assessment practices (more verbal assessment as well as an incorporation of self-assessment by students).	Teachers reported that opportunities for SRL are not realised in every lesson.
Lombaerts, Engels, & Van Braak (2009)	Belgium	Questionnaires	Demographic and background variables did not affect teachers'	Found a positive and direct relationship between SRL	

Determinants of Teachers' Recognitions of Self-Regulated Learning Practices in Elementary Education	172 elementary (primary) school teachers (69.4% female). Average 14.2 years' experience.	Descriptive statistics and path analyses used to analyse data.	recognitions of SRL practices.	belief and SRL implementation. Three variables were found to affect SRL practices: (a) teacher satisfaction with personal SRL insights and teacher staff, (b) teachers' beliefs about the introduction of SRL on an elementary education level, and (c) teachers' personal experiences with independent learning in their classroom practice. Results indicated that teachers' beliefs about personal and school contexts' influence on the introduction of SRL were not related to their	

				recognitions of SRL practices. Results indicated that if teachers are determined to introduce SRL practices into their classrooms and therefore promote SRL in their pupils, this is possible regardless of less inspiring contextual factors at the level of school and classroom environments.	
Krečič & Grmek (2010) *Teachers' Conceptions of Self-Regulated Learning - A Comparative Study by Level Of*	Slovenia 360 elementary (primary)- and 182 grammar (secondary)-school teachers (91.9% female).	Questionnaire Used statistical analyses (e.g., Kruskal – Wallis test for checking differences between	The results show that more process-oriented conceptions of SRL are common with teachers who are at advanced level in their professional development. Teachers from the advanced level of		

Professional Development		groups of teachers).	professional development placed heavy emphasis on students' motivation. Furthermore, those teachers trust their students' capabilities and are firm in their belief that student activities and self-initiatives are important for a successful learning process, and that pupils know how to evaluate their achievements.		
Marchis (2011) *How Mathematics Teachers Develop Their Pupils' Self-*	Romania 62 mathematics teachers (primary, secondary and	Questionnaire Presented only descriptive statistics.			Over two thirds of the teachers promoted the methods of understanding the problem and developing pupils' self-efficacy and self-control.

Regulated Learning Skills	high school; 83.9% female).				Only a third of the teachers encouraged pupils to use different strategies for solving a problem and asked students to explain their solution to their peers.
Chatzistamatiou & Dermitzaki (2013) *Teaching mathematics with selfregulation and for self-regulation: Teachers' reports*	Greece 292 elementary (primary) school teachers (56.8% female). Average 13.28 years' experience.	Questionnaires Confirmatory Factor Analysis and MANOVA to analyse data.			Teachers' reports reflected use of strategies for cultivating students' planning and forethought skills, metacognitive and reflection skills, and solution evaluation skills. Significant differences between male and female teachers were found with regard to the reported use of strategies for planning learning and instruction (female teachers reported more use of these strategies).

					Experienced teachers reported significantly more frequent use of self-regulatory strategies than novice teachers.
Dignath, Dickhauser, & Büttner (2013) *Assessing how teachers enhance self-regulated learning: A multiperspective approach*	Germany 17 secondary school mathematics teachers (6 female). Average 17 years' experience.	Lesson observations Questionnaire Statistical analyses including multilevel regression. Used the ATES to code observations.	Many teachers lacked sufficient knowledge about metacognition. Teachers reported greater SRL promotion than observers did (suggesting teachers lacked knowledge regarding how to promote SRL).	Teachers agreed with the concept of supporting their students to become self-regulated learners; however, many of them reported feeling unsure about how to do so.	Observation data revealed that generally, teachers instructed very few metacognitive strategies, and rarely instructed strategies in an explicit way. Teachers' design of the lesson scored rather low with regard to constructivist characteristics.
Tanrıseven (2013)	Turkey	Questionnaires Correlational analyses.		Teachers' self-efficacy beliefs were strongly related to their SRL implementation.	Teachers promoted SRL at the *very often* level. Teachers encouraged students' goal setting,

Primary School Teachers' Realization Levels of Self-Regulated Learning Practices and Sense of Efficacy	400 primary school teachers (25% female).				strategy planning and sense of efficacy for the forethought phase; supported their self-control and self-observation processes for the performance control phase; and frequently supported metacognitive self-evaluations and affective and motivational reactions to the performance result for the self-reflection phase.
Alvi & Gillies (2015) *Social interactions that support students' self-regulated learning: A case study of one*	Australia 1 (female) secondary school teacher with 44 years' experience.	Interview and informal conversations Lesson observations			Identified the following sub-processes involved within the teacher's SRL supportive approach: constructive social interactions, guiding students from individualization to socialization, promotive

teacher's experiences		Inductive approach to data analysis.			interactions, mediations, directing from simple to complex processes, reflections and evaluations of learning, and the final move from social interactions to SRL.
Kistner, Rakoczy, Otto, Kliieme, & Büttner (2015) *Teaching learning strategies: The role of instructional context and teacher beliefs*	Germany 20 secondary school mathematics teachers (25% female). Average 16 years' experience.	Lesson observations Questionnaire Analysed data using statistical analyses (correlations, MANOVA). Used the ATES to code observations.		Findings suggested that teacher beliefs play a role in the context of the promotion of learning strategies. Teachers with more constructivist beliefs addressed more metacognitive planning strategies during their lessons. No associations between teachers' beliefs and any other type of strategy instruction were identified.	Observational data revealed that strategy teaching in this sample predominantly consisted in implicit prompting of strategic behaviour, rather than explicit strategy teaching.

				Negative relations with strategy teaching were found for the traditional teacher beliefs: formalist view of mathematics and relevance of extrinsic motivation.	
Spruce & Bol (2015) *Teacher beliefs, knowledge, and practice of self-regulated learning*	USA 84 teachers completed questionnaires; 10 (female) teachers completed interviews and were observed teaching lessons (average 15 years' experience).	Interviews Lesson observations Questionnaire Descriptive statistics. Qualitative data was analysed inductively and deductively.	Teachers' knowledge of SRL was generally low.	Teachers indicated positive beliefs about SRL, however teachers generally believed that students may not be ready to self-regulate at the middle school level.	Teachers' promotion of SRL in their classrooms were generally low. The observed teachers activated most SRL among their students during the monitoring phase of learning, but hardly during the planning phase, and even less during the reflection/evaluation phase of the learning cycle. Moreover, they observed only little direct instruction

	Middle and elementary (primary and secondary) schoolteachers.				of metacognitive strategies in the participating classrooms.
Peeters, De Backer, Kindekens, Triquest, & Lombaerts (2016) *Teacher differences in promoting students' self-regulated learning: Exploring the role of student characteristics*	Belgium 127 primary school teachers (77.6% female). Average 16 years' experience.	Semi-structured interviews Deductive strategies used to analyse data.	Teachers' SRL knowledge was found to explain differences in instructional decisions regarding SRL support.	Almost all teachers referred to the role of student characteristics as influencing to some degree their disposition to SRL promotion. Some teachers explicitly described feeling responsible for actively supporting SRL, rather than merely believing in its usefulness. Teachers expressing strong beliefs in the value of SRL were found more motivated to support students displaying potentially challenging characteristics.	

				Teachers reported providing varying degrees of SRL opportunities, dependent on their student-perceived cognitive and self-regulatory abilities. Found that there were a group of teachers in the sample who regarded the promotion of SRL as being of relevance only to high achieving students. Teachers' perceptions of students' self-regulating abilities appeared to be associated with student age and gender. A group of teachers (36.2%) believed that young children were not yet capable of self-regulation and that SRL	

				could only be promoted from the 3rd or 4th grade onwards. Five teachers (3.9%) discussed the role of gender but did not agree whether boys or girls prove inherently better at SRL. Students' socio-economic background was also reported to play a role in teachers' SRL promotion (14.2%). Some teachers posited that children from low socio-economic backgrounds often lacked the necessary parental support, and stimuli, for their SRL development at home. In contrast, several teachers expressed that students from higher socio-economic backgrounds	

				might equally face disadvantages in their SRL development, possibly from too much parental guidance and limited freedom to self-regulate. Teachers (4.7%) reported that fostering SRL development with students facing certain learning problems required greater effort and time; teachers questioned whether these students could engage in and benefit from independent SRL processes. When allowing students to self-regulate, teachers expressed fears of not attaining the necessary teaching goals.	

				While some teachers were motivated to instruct SRL due to certain student characteristics, others felt demotivated.	
Steinbach & Stoeger (2016) *How primary school teachers' attitudes towards self-regulated learning (SRL) influence instructional behavior and training implementation in classrooms*	Germany 47 primary school teachers (80.9% female).	Questionnaire Hierarchical multiple regression analyses.		Found correlations between teachers' attitudes towards SRL and constructivist beliefs about teaching. Did not find a relationship between teachers' SRL attitudes and their self-reported SRL promotion.	
Geduld (2017) *Teachers' Perceptions of*	South Africa	Semi-structured interviews	Teachers varied in their theoretical and practical knowledge of SRL. Half the teachers had a	Teachers perceived SRL as valuable and a requirement for academic achievement.	There was a considerable variation in the occurrence, as well as the quality of participants' teaching

How They Develop Self-Regulated Learning	14 secondary school teachers.	Lesson observations Methods of data analysis were unclear.	limited understanding of what SRL entails and what their roles in the development of SRL are. Although all participants claimed to develop SRL, only half of the participants demonstrated teacher behaviour that develops SRL. Teachers who had more knowledge about SRL and who understood their roles in the development of SRL, demonstrated more observable teaching behaviour that develops SRL.	Teachers who were more positive about SRL demonstrated more observable teaching behaviour that develops SRL.	behaviour to develop learners' SRL.
Mahendiran & Kumar (2017)	India	Questionnaire		Teachers generally held positive beliefs about SRL,	

Impact of self-regulated learning on teaching-learning process among teacher educators in Tiruvannamalai District	110 primary and secondary teachers (34.5% female).	Descriptive and inferential statistics (e.g., t-tests, ANOVA).		however a significant attitudinal difference among teachers based on their gender and age group, was also found.	
Soliman & Alenazi (2017) *Primary Teachers' Beliefs and Knowledge about Self-regulated Learning in the Kingdom of Saudi Arabia*	Saudi Arabia 84 primary school teachers (47.6% female).	Questionnaire Correlational analyses and t-tests.	Teachers exhibited low level knowledge of self-regulated learning. There were no observed differences of gender or years' teaching experience.	Teachers exhibited high beliefs of self-regulated learning and conceptualised SRL as being the best way to transfer the responsibility of learning from the teacher to the learner. Found significant differences for gender and years' teaching experience	

				in terms of teachers' beliefs regarding SRL.	
Dignath & Büttner (2018) *Teachers' direct and indirect promotion of self-regulated learning in primary and secondary school mathematics classes – insights from video-based classroom observations and teacher interviews*	Germany 28 teachers (12 primary, 16 secondary; average 14 and 17 years' experience respectively).	Semi-structured interviews Lesson observations Used the ATES to code observations and used a systematic coding scheme to analyse interview data.	Teachers had limited knowledge of SRL strategies and had difficulties defining metacognitive strategies. The correlations between teacher-reported and observed promotion of SRL indicated that there is limited correspondence between how teachers describe their promotion of SRL and how they actually promote it during their lessons.	Found a connection between teachers' beliefs and their knowledge, at least with regard to the instruction of cognitive strategies.	Results of the classroom observations indicated that the instruction of metacognitive and motivation strategies was seldom. Both primary and secondary school teachers focused mainly on cognitive strategies. Mostly implicit instruction of SRL strategies were observed. Secondary school teachers rarely taught or explained strategies explicitly to their students, and among the primary school teachers no explicit instruction of SRL strategies or reflection on

					such strategies was observed. Regarding the indirect promotion of SRL, the results indicated that many teachers created opportunities for students to engage in SRL by applying constructivist learning principles in their teaching, promoting situated learning, and fostering student-directed learning. Results suggested that teachers foster SRL among primary school students differently from how they foster SRL with secondary school students.

Huh & Reigeluth (2018) *Online K-12 teachers' perceptions and practices of supporting self-regulated learning*	USA 112 online primary and secondary school teachers. Average 4 years' experience of online teaching.	Questionnaire Descriptive statistics and ANOVA.		Teachers on average thought SRL was important for their online students regardless of their grade levels.	Teachers' practices of supporting students' SRL were more focused on cognition and behaviour in the various areas of SRL as well as monitoring and controlling in the various phases of SRL.
Yan (2018) *How teachers' beliefs and demographic variables impact on self-regulated learning instruction*	Hong Kong 873 teachers (429 primary, 444 secondary; 68% female). Average 13 years' experience.	Questionnaires Hierarchical multiple regression analyses.		Teachers generally held positive beliefs in terms of students' capacity to implement SRL, and the benefits associated with SRL. Results suggested that primary teachers perceived more benefits for students	Teachers claimed to teach SRL strategies in their classroom instructions, with female teachers claiming to use more.

				associated with SRL than their secondary colleagues. Regression analyses showed a strong and positive correlation between teachers' SRL beliefs, both on benefits of SRL and students' capacities, and instructional practices.	
Callan & Shim (2019) *How Teachers Define and Identify Self-Regulated Learning*	USA 128 primary and secondary school teachers (73% female).	Open-ended questionnaire Deductive strategies used to analyse data.	84% of teachers identified none or only one of the SRL processes that researchers emphasise. The most commonly identified SRL components were motivation and self-monitoring, whereas reflection (e.g., attributions and adaptive		

			inferences) and forethought processes (i.e., goal-setting and planning) were discussed least often. When asked how teachers identify students with deficient SRL, teachers more often described underachievement and disengagement as opposed to observed deficits in SRL processes.		
De Smul, Heirweg, Devos & Van Keer (2019) *School and teacher*	Belgium 331 primary school teachers (81.3% female). Average 16	Questionnaires Used Structural Equation Modelling.		Found that teachers' SRL beliefs had a strong direct and positive relationship with self-reported SRL implementation. Teachers who considered SRL strategies important to	

determinants underlying teachers' implementation of self-regulated learning in primary education	years' experience.			teach were more inclined to implement these strategies in their classroom practices. Teacher self-efficacy for SRL had the strongest positive relation with self-reported SRL implementation and was predicted by teacher SRL beliefs. Teachers who believed SRL implementation in primary education is important, felt more competent implementing and teaching the necessary SRL strategies. This was in turn strongly related to self-reported SRL implementation in the classroom (i.e., found a	

				mediating role of teacher self-efficacy between SRL beliefs and self-reported SRL implementation).	
Geduld (2019) *A snapshot of teachers' knowledge and teaching behaviour with regard to developing self-regulated learning*	South Africa 10 secondary school teachers (6 female).	Semi-structured interviews Content and thematic analysis.	Teachers lacked pedagogical knowledge to develop SRL.	Teachers held positive beliefs about SRL, however they perceived challenges to develop pupils' SRL due to departmental pressure regarding curriculum coverage, assessment, and administration. All teachers perceived their teaching behaviour to be geared towards the expansion of motivation, confidence, and self-efficacy to develop learners' SRL.	Teachers used cognitive strategies such as repetition, elaboration, questioning, summarising, and activating prior knowledge to develop SRL. Teachers also used step-by-step explanations and modelling in combination with direct teaching. Concluded that the SRL aspects of goal setting, planning, task analysis, and time management were neglected in most of the teachers' teaching behaviour.

					The participants mostly embedded self-evaluation and formative assessment by frequently setting short tests.
Alvi & Gillies (2020a) *A Case Study of a Grade 7 Teacher's Perspectives and Practices Related to Self-Regulated Learning (SRL)*	Australia 1 (female) secondary school teacher with 4 years' experience.	Semi-structured interview Lesson observations Inductive and deductive analytical strategies.			The teacher emphasised the process of learning (with a clear vision of goals) by following a general guideline during which she supported students' SRL. It involved multiple components including developing the context of learning and tuning in, brainstorming, focused and explicit teaching, extending learning, evaluating, and developing advanced cognitive networks.

					To foster pupils' SRL, the teacher provided a constructivist learning environment where students were offered choice, opportunities for independent and collaborative work, explicit teaching, modeling of appropriate skills and behaviours as well as possibilities for engagement in self-observation, self-judgment and self-reaction.
Alvi & Gillies (2020b) *Teachers and the Teaching of Self-Regulated Learning (SRL): The Emergence*	Australia 6 primary school teachers. Average 19.9 years' experience.	Interviews Lesson observations Inductive and deductive	Teachers' conceptualisations of SRL stressed cognitive, meta-cognitive, motivational, behavioural and strategic components.	Teachers identified multiple factors that influence their efforts to promote students' SRL, including their beliefs, abilities and motivational levels, classroom environment, resources, curriculum, students' home	Effective practices employed by the teachers to support students' SRL included: providing instructional, motivational, behavioral, instrumental/strategic, and recreational support;

of an Integrative, Ecological Model of SRL-in-Context		analytical strategies.		and family backgrounds, parents, and community. They believed that these factors add to the complexity of SRL, thus, making it a dynamic and complex process. In addition, teachers expressed concerns about pressure from external sources (e.g., authority).	fostering critical and independent thinking; continuous monitoring and feedback; and involving the community.
Dignath & Sprenger (2020) *Can You Only Diagnose What You Know? The Relation Between Teachers' Self-Regulation of Learning Concepts and*	Germany 205 primary school teachers (87% female). Average 14 years' teaching experience.	Highly structured interviews (73 teachers). Open-ended questionnaire (132 teachers). Developed a coding framework in	A quarter of all teachers did not refer to any regulation procedure at all, and 40% of the teachers described SRL as student autonomy and self-directedness. Only few teachers had a comprehensive conception of the entire SRL cycle.		

Their Assessment of Students' Self-Regulation		an inductive and deductive way.	Many teachers associated SRL with the regulation of cognitive and metacognitive aspects as well as with the regulation of motivation. However, no teachers referred to the regulation of emotions. Identified three patterns of teachers' conceptualizations of SRL: a motivation-oriented, an autonomy-oriented, and a regulation-oriented conceptualisation of SRL. Many teachers considered SRL to be a self-directed process		

			rather than a regulation process.		
Geduld & Sikwanga (2020) *Juxtaposing South African and Namibian Teachers' Perceptions and Teaching Practices to Develop Self-Regulated Learning: Do They Practise What They Preach?*	Namibia & South Africa 28 teachers (age of pupils taught not reported). Average 15 and 8 years' experience (Namibian & South African teachers, respectively).	Semi-structured interviews Lesson observations Used content and thematic analyses.	All the participants claimed to develop SRL but only a little more than half of the participants' teaching aided the development and support of learners' SRL skills. Disjunctions were noted between some lesson observations and teachers' perceptions of how they develop SRL. Data from lesson observations showed that almost half of each country's participants' perceptions of how they develop SRL were not aligned with their actual teaching practices to develop SRL.	Participants from both countries perceived the importance of their subject knowledge and their motivational roles as vehicles to develop SRL skills. South African participants emphasised the importance of being a passionate, well prepared teacher to foster SRL skills.	To develop skills in the volitional phase, Namibian participants relied on memorisation whereas the South African participants mentioned more sophisticated and meaningful task strategies. The most common strategy used by Namibian and South African participants to develop skills in the self-reflection phase was small tests, homework, peer and self-assessment.

Karlen, Hertel, & Hirt (2020) *Teachers' Professional Competences in Self-Regulated Learning: An Approach to Integrate Teachers' Competences as Self-Regulated Learners and as Agents of Self-Regulated Learning in a Holistic Manner*	Switzerland 58 primary school teachers and 48 secondary school teachers (73% female). Average 15.38 years' teaching experience.	Questionnaires Used correlational and regression analyses.	Found that although teachers varied substantially, they generally had low to moderate knowledge about SRL. Pedagogical Content Knowledge of SRL significantly predicted teachers' self-reported implementation of SRL.	Teachers held positive beliefs about SRL and showed moderate motivation to act as agents of SRL. Self-efficacy to implement SRL significantly predicted teachers' self-reported implementation of SRL.	Teachers reported implementing aspects of SRL in their classroom.
Peel (2020) *Everyday classroom teaching*	Australia Case study of four primary school teachers	Semi-structured interviews			Found four approaches used by teachers to promote SRL: (1) connect the goal orientated learning with purposeful

practices for self-regulated learning	(average 10.25 years' teaching experience) and four secondary school teachers (average 11.75 years' teaching experience).	Lesson observations Used thematic analysis.			engagement; (2) facilitate the activation of thinking strategies; (3) diversify learning opportunities that enable an expectation of success; and (4) socialise the learning within created caring communities.
Saraç & Tarhan (2020) *Preschool teachers' promotion of self-regulated learning in the classroom and role of contextual and teacher-level factors*	Turkey 210 female preschool teachers.	Questionnaires Used ANOVA and linear regressions.		Teacher self-efficacy was a strong predictor of teachers' SRL promotion.	Novice teachers reported more frequent SRL promotion than experienced teachers. The amount of SRL practices was affected by class size: teachers with more than 15 children reported less frequent SRL promotion. More SRL promotion was reported by teachers of

					older children (61-72 month olds) compared to younger children (48-60 month olds).
Thomas, Peeters, De Backer, & Lombaerts (2020) *Determinants of self-regulated learning practices in elementary education: a multilevel approach*	Belgium 591 primary school teachers (81.8% female). Average 13.48 years' teaching experience.	Questionnaires Used a multilevel random-effects model.		Teachers' developmental beliefs about elementary education as well as their beliefs regarding the suitability and desirability of SRL in elementary education were positively correlated with their reported SRL promotion. Positive previous experiences with autonomous learning in the classroom encouraged teachers to further engage in SRL promotion, independent of their educational beliefs.	Found that on average, teachers' promotion of SRL in the classroom indicated that SRL promotion occurred to a rather limited extent. Teacher gender and class size were not correlated with teachers' promotion of SRL. The older teachers were, the less they reported promoting SRL in their classroom practice.

Alvi & Gillies (2021) *Promoting self-regulated learning through experiential learning in the early years of school: a qualitative case study*	Australia Case study of a female primary school teacher with five years' teaching experience.	Semi structured interview 29 hours of lesson observations Employed a range of analytical strategies to analyse and interpret data, employing inductive and deductive strategies in a recursive and rigorous fashion.	The teacher demonstrated an awareness that reason and emotion are inextricably related and are essential for regulation of learning.		Found that the teacher frequently involved her students in reflective and metacognitive activities after engaging them in experience-based learning. The teacher's overall approach to support students' SRL through experiential learning was organised along five major categories including: connecting learning with real-life experiences, active learning, motivation, critical and reflective thinking, and inventing and resolving problems. The teacher employed an approach consistent with

					Deweys' philosophy of experience and education. The teacher clearly linked students' experiences to the learning objective. The teacher engaged students in different activities that offered intrinsic meaning and value. The teacher encouraged students to invent and resolve problems through active experimentation.
Heirweg, De Smul, Merchie, Devos, & Van Keer (2021)	Belgium 110 primary school teachers (73.6% female).	Questionnaires Analysed data using multilevel path analyses.		Teachers in this sample scored highly on SRL beliefs, i.e., they generally acknowledged the value of SRL for their students to a large extent.	

Do you reap what you sow? The relationship between primary school students' self-regulated learning and student, teacher, and school determinants	Average 15.63 years' teaching experience.			Found that teachers who perceive SRL as more important for their students feel more competent in promoting SRL. Found that teachers who feel more competent to implement SRL and who attribute more value to SRL also report more frequent SRL promotion.	

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Appendix 5: Social Media Advert June 2021

Information about self-regulated learning

What is self-regulated learning?

- ? Self-regulated learning can be defined as the ability to plan, monitor, and evaluate learning. The self-regulating learning framework can be understood as an umbrella concept overarching multiple strategies that make learners more effective.
- ? As well as teaching curriculum content, it is also important to teach *how* to learn. Teaching self-regulating learning strategies can provide pupils with the tools to maximise their achievement.
- ? Self-regulated learning requires pupils to take greater responsibility for their learning and develop their understanding of what is required to succeed.

Why is self-regulated learning important?

- ★ Self-regulated learning is seen as a potentially effective and low-cost way of positively impacting learning.
- ★ Research has demonstrated the positive influence of self-regulated learning on pupils' academic achievement: metacognition and self-regulation approaches have consistently high levels of impact, with pupils making an average of seven months' additional progress.
- ★ Research has demonstrated that both primary and secondary school aged pupils can learn how to self-regulate their learning and this requires teachers to adapt their teaching according to pupils' capacities.
- ★ Research indicates that teaching self-regulated learning strategies can be particularly effective for low achieving pupils.

Why prioritise participating in this research?

- ◆ Self-regulated learning has been declared to be one of the major competencies for 21st century learners.
- ◆ Despite self-regulated learning being a teachable skill and evidence that self-regulating learning strategies can be integrated into classroom lessons with beneficial effects, research suggests that this practice is not widespread.
- ◆ Research has yet to investigate teachers' perceptions of supporting self-regulated learning in the UK, although a recent article in *Impact*, a UK journal of the Chartered College of Teaching, highlighted that teachers are not always clear about what metacognition and self-regulated learning means or what it looks like in the classroom.
- ◆ I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, you do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

If you are currently a teacher in the UK, please consider taking part in this research.

References

Education Endowment Foundation (2018) *Metacognition and Self-Regulated Learning: Guidance Report*. London: EEF.

Mannion, J. (2020). Metacognition, self-regulation and self-regulated learning: What's the difference? *Impact, 8.* Retrieved from https://impact.chartered.college/article/metacognition-self-regulation-regulated-learning-difference/

Zimmerman, B. J. (2002). Becoming a self-regulated learner: an overview. *Theory into Practice, 41,* 64–70.

Appendix 6: Gatekeeper Letter to PEPs June 2021

Subject – TEP Thesis research

Dear X

I hope this email reaches you well.

I am a Trainee Educational Psychologist completing the Doctorate in Educational Psychology Training Programme in the School of Psychology, Cardiff University. As part of my degree, I am carrying out research to explore teachers' perceptions of supporting self-regulated learning.

I am contacting you to ask whether you could disseminate information about this research to Headteachers in your local authority (please see attached [1] gatekeeper letter for Headteachers; [2] participant information sheet and consent form).

The working title for this research is *"Understanding teachers' perceptions of supporting self-regulated learning"*, and it is being supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning. As part of this research, I am conducting a series of semi-structured interviews online (via Zoom) with teachers in the UK.

I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, teachers do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

Participation in this research would involve teachers being interviewed individually via Zoom by myself (Angharad Cooze) at a time which is convenient for them. The interviews will last approximately one hour. All data will be handled confidentially. The interviews will be recorded and transcribed within two weeks, after which the recording will be deleted, and the data will be anonymised. Teachers can withdraw their data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

Once the research is completed, the findings will be shared with participants if they wish.

Please let me know if you require further information. If teachers are willing to give consent to take part in this research, they can complete the consent form and email it to coozean@cardiff.ac.uk .

Thank you for taking the time to consider my request. I would be very grateful for your support.

Kind Regards

Appendix 7: Gatekeeper Letter to Headteachers June 2021

School of Psychology

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

I am a Trainee Educational Psychologist completing the Doctorate in Educational Psychology Training Programme in the School of Psychology, Cardiff University. As part of my degree, I am carrying out research to explore teachers' perceptions of supporting self-regulated learning. Further information about self-regulated learning can be found on the next page.

I am contacting you to ask whether you could disseminate information about this research to teachers in your school (please see attached participant information sheet and consent form).

The working title for this research is *"Understanding teachers' perceptions of supporting self-regulated learning"*, and it is being supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning. As part of this research, I am conducting a series of semi-structured interviews online (via Zoom) with teachers in the UK.

I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, teachers do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

Participation in this research would involve teachers being interviewed individually via Zoom by myself (Angharad Cooze) at a time which is convenient for them. The interviews will last approximately one hour. All data will be handled confidentially. The interviews will be recorded and transcribed within two weeks, after which the recording will be deleted, and the data will be anonymised. Teachers can withdraw their data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

Once the research is completed, the findings will be shared with participants if they wish.

Please let me know if you require further information. If teachers are willing to give consent to take part in this research, they can complete the consent form and email it to coozean@cardiff.ac.uk .

Regards,

Angharad Cooze

Trainee Educational Psychologist

Email: coozean@cardiff.ac.uk

Ethics Committee Contact Details

psychethics@cardiff.ac.uk

02920870360

Research Supervisor Contact Details

Dr Ian Smillie
Professional Tutor,
Doctorate in Educational Psychology
School of Psychology,
Cardiff University Tower Building,
Park Place,
CARDIFF,
CF10 3EU.
Email: smillie@cardiff.ac.uk

Information about self-regulated learning

What is self-regulated learning?

- ? Self-regulated learning can be defined as the ability to plan, monitor, and evaluate learning. The self-regulating learning framework can be understood as an umbrella concept overarching multiple strategies that make learners more effective.
- ? As well as teaching curriculum content, it is also important to teach *how* to learn. Teaching self-regulating learning strategies can provide pupils with the tools to maximise their achievement.
- ? Self-regulated learning requires pupils to take greater responsibility for their learning and develop their understanding of what is required to succeed.

Why is self-regulated learning important?

- ★ Self-regulated learning is seen as a potentially effective and low-cost way of positively impacting learning.
- ★ Research has demonstrated the positive influence of self-regulated learning on pupils' academic achievement: metacognition and self-regulation approaches have consistently high levels of impact, with pupils making an average of seven months' additional progress.
- ★ Research has demonstrated that both primary and secondary school aged pupils can learn how to self-regulate their learning and this requires teachers to adapt their teaching according to pupils' capacities.
- ★ Research indicates that teaching self-regulated learning strategies can be particularly effective for low achieving pupils.

Why prioritise participating in this research?

- ◆ Self-regulated learning has been declared to be one of the major competencies for 21st century learners.
- ◆ Despite self-regulated learning being a teachable skill and evidence that self-regulating learning strategies can be integrated into classroom lessons with beneficial effects, research suggests that this practice is not widespread.
- ◆ Research has yet to investigate teachers' perceptions of supporting self-regulated learning in the UK, although a recent article in *Impact*, a UK journal of the Chartered College of Teaching, highlighted that teachers are not always clear about what metacognition and self-regulated learning means or what it looks like in the classroom.
- ◆ I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, you do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

If you are currently a teacher in the UK, please consider taking part in this research.

References

Education Endowment Foundation (2018) *Metacognition and Self-Regulated Learning: Guidance Report*. London: EEF.

Mannion, J. (2020). Metacognition, self-regulation and self-regulated learning: What's the difference? *Impact, 8.* Retrieved from https://impact.chartered.college/article/metacognition-self-regulation-regulated-learning-difference/

Zimmerman, B. J. (2002). Becoming a self-regulated learner: an overview. *Theory into Practice, 41,* 64–70.

Appendix 8: Participant Information Sheet June 2021

School of Psychology

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

I am a Trainee Educational Psychologist completing the Doctorate in Educational Psychology Training Programme in the School of Psychology, Cardiff University. As part of my degree, I am carrying out research to explore teachers' perceptions of supporting self-regulated learning. Further information about self-regulated learning can be found on the next page.

The working title for this research is *"Understanding teachers' perceptions of supporting self-regulated learning"*, and it is being supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning. As part of this research, I am conducting a series of semi-structured interviews online (via Zoom) with teachers in the UK.

I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, you do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

Participation in this research would involve being interviewed individually via Zoom by myself (Angharad Cooze) at a time which is convenient for you. The interview will last approximately one hour. All data will be handled confidentially. The interview will be recorded and transcribed within two weeks, after which the recording will be deleted, and the data will be anonymised. You can withdraw your data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

Once the research is completed, the findings will be shared with you if you wish.

Please let me know if you require further information. If you are willing to give consent to take part in this research, please complete the consent form (attached) and email it to coozean@cardiff.ac.uk .

Regards,

Angharad Cooze

Trainee Educational Psychologist

Email: coozean@cardiff.ac.uk

Ethics Committee Contact Details

psychethics@cardiff.ac.uk

02920870360

Research Supervisor Contact Details

Dr Ian Smillie
Professional Tutor,
Doctorate in Educational Psychology
School of Psychology,
Cardiff University Tower Building,
Park Place,
CARDIFF,
CF10 3EU.
Email: smillie@cardiff.ac.uk

Privacy Notice

The information provided will be held in compliance with GDPR regulations. Cardiff University is the data controller and James Merrifield is the data protection officer (inforequest@cardiff.ac.uk). The lawful basis for processing this information is public task. This information is being collected by Angharad Cooze.

The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form, and it will be destroyed after 7 years.

The research information provided will be used for the purposes of research only and will be stored securely. Only Angharad Cooze will have access to this information. After two weeks the data will be anonymised (any identifying elements removed) and this anonymous information will be shared through a doctoral thesis.

Information about self-regulated learning

What is self-regulated learning?

- ? Self-regulated learning can be defined as the ability to plan, monitor, and evaluate learning. The self-regulating learning framework can be understood as an umbrella concept overarching multiple strategies that make learners more effective.
- ? As well as teaching curriculum content, it is also important to teach *how* to learn. Teaching self-regulating learning strategies can provide pupils with the tools to maximise their achievement.
- ? Self-regulated learning requires pupils to take greater responsibility for their learning and develop their understanding of what is required to succeed.

Why is self-regulated learning important?

- ★ Self-regulated learning is seen as a potentially effective and low-cost way of positively impacting learning.
- ★ Research has demonstrated the positive influence of self-regulated learning on pupils' academic achievement: metacognition and self-regulation approaches have consistently high levels of impact, with pupils making an average of seven months' additional progress.
- ★ Research has demonstrated that both primary and secondary school aged pupils can learn how to self-regulate their learning and this requires teachers to adapt their teaching according to pupils' capacities.
- ★ Research indicates that teaching self-regulated learning strategies can be particularly effective for low achieving pupils.

Why prioritise participating in this research?

- ◆ Self-regulated learning has been declared to be one of the major competencies for 21st century learners.
- ◆ Despite self-regulated learning being a teachable skill and evidence that self-regulating learning strategies can be integrated into classroom lessons with beneficial effects, research suggests that this practice is not widespread.
- ◆ Research has yet to investigate teachers' perceptions of supporting self-regulated learning in the UK, although a recent article in *Impact*, a UK journal of the Chartered College of Teaching, highlighted that teachers are not always clear about what metacognition and self-regulated learning means or what it looks like in the classroom.
- ◆ I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, you do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

If you are currently a teacher in the UK, please consider taking part in this research.

References

Education Endowment Foundation (2018) *Metacognition and Self-Regulated Learning: Guidance Report*. London: EEF.

Mannion, J. (2020). Metacognition, self-regulation and self-regulated learning: What's the difference? *Impact, 8.* Retrieved from https://impact.chartered.college/article/metacognition-self-regulation-regulated-learning-difference/

Zimmerman, B. J. (2002). Becoming a self-regulated learner: an overview. *Theory into Practice, 41,* 64–70.

Appendix 9: Participant Consent Form June 2021

School of Psychology

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

Consent Form – Confidential data

I understand that my participation in this project will involve taking part in an online interview with the researcher (Angharad Cooze). The interview will last for approximately one hour.

I understand that my participation in this research is entirely voluntary and that I can withdraw from the research at any time during the interview without giving a reason. I also understand that I can withdraw my data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

I understand that I can ask any questions at any time before, during, or after the interview. I can contact the researcher (Angharad Cooze) or the research supervisor (Dr Ian Smillie) if I have any questions.

I understand that my personal data will be processed in accordance with GDPR regulations (see privacy statement below).

I understand that at the end of the research I will be provided with additional information and feedback about the purpose of the research.

I, _____ (NAME) consent to participating in the research conducted by Angharad Cooze, School of Psychology, Cardiff University under the supervision of Dr Ian Smillie.

Signed: _____

Date: _____

Researcher Contact Details

coozean@cardiff.ac.uk

Ethics Committee Contact Details

psychethics@cardiff.ac.uk

02920870360

Research Supervisor Contact Details
Dr Ian Smillie
Professional Tutor,
Doctorate in Educational Psychology
School of Psychology,
Cardiff University Tower Building,
Park Place,
CARDIFF,
CF10 3EU.
Email: smillie@cardiff.ac.uk

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The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form, and it will be destroyed after 7 years.

The research information provided will be used for the purposes of research only and will be stored securely. Only Angharad Cooze will have access to this information. After two weeks the data will be anonymised (any identifying elements removed) and this anonymous information will be shared through a doctoral thesis.

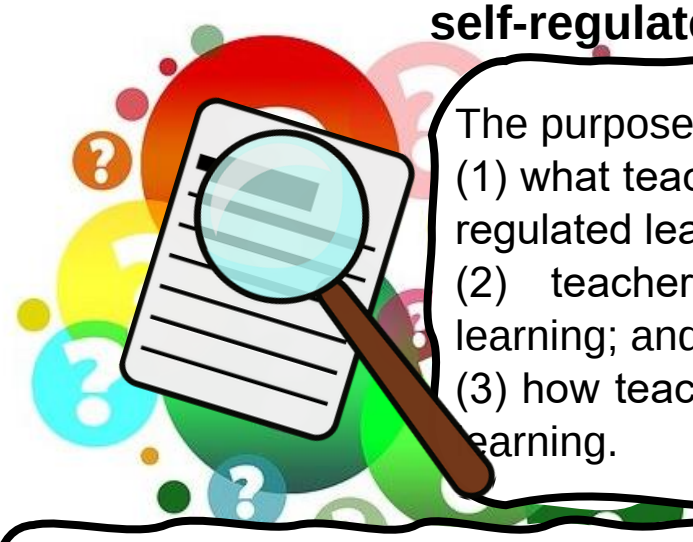
Appendix 10: Poster for Social Media August 2021

School of Psychology

TEACHERS WANTED FOR DOCTORAL RESEARCH STUDY

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

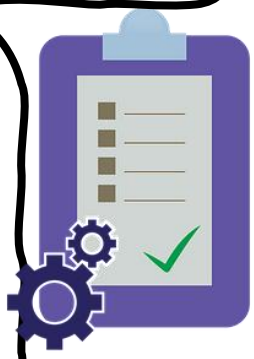


The purpose of this research is to explore
(1) what teachers understand by the term 'self-regulated learning';
(2) teachers' beliefs about self-regulated learning; and
(3) how teachers support pupils' self-regulated learning.

To participate in this research, **you do not have to have extensive knowledge or have received training in this area**. This research is interested in your views only.

If you are currently a teacher in the UK and are interested in participating in this research, please complete a **short survey**.

The survey consists of **16 questions** (the majority of which are multiple choice) and will take approximately **8 minutes** to complete.



Appendix 11: Participant Information Sheet August 2021

School of Psychology

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

I am a Trainee Educational Psychologist completing the Doctorate in Educational Psychology Training Programme in the School of Psychology, Cardiff University. As part of my degree, I am carrying out research to explore teachers' perceptions of supporting self-regulated learning. Further information about self-regulated learning can be found on the next page.

The working title for this research is *"Understanding teachers' perceptions of supporting self-regulated learning"*, and it is being supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning. As part of this research, I am conducting a series of semi-structured interviews online (via Zoom) with teachers in the UK.

I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, you do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

Participation in this research would involve being interviewed individually via Zoom by myself (Angharad Cooze) at a time which is convenient for you. The interview will last approximately 45 minutes. All data will be handled confidentially. The interview will be recorded and transcribed within two weeks, after which the recording will be deleted, and the data will be anonymised. You can withdraw your data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

Once the research is completed, the findings will be shared with you if you wish.

Please let me know if you require further information. If you are willing to give consent to take part in this research, please complete the consent form (attached) and email it to coozean@cardiff.ac.uk .

Regards,

Angharad Cooze

Trainee Educational Psychologist

Email: coozean@cardiff.ac.uk

Ethics Committee Contact Details

psychethics@cardiff.ac.uk

02920870360

Research Supervisor Contact Details

Dr Ian Smillie
Professional Tutor,
Doctorate in Educational Psychology
School of Psychology,
Cardiff University Tower Building,
Park Place,
CARDIFF,
CF10 3EU.
Email: smillie@cardiff.ac.uk

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The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form, and it will be destroyed after 7 years.

The research information provided will be used for the purposes of research only and will be stored securely. Only Angharad Cooze will have access to this information. After two weeks the data will be anonymised (any identifying elements removed) and this anonymous information will be shared through a doctoral thesis.

Information about self-regulated learning

What is self-regulated learning?

- ? Self-regulated learning can be defined as the ability to plan, monitor, and evaluate learning. The self-regulated learning framework can be understood as an umbrella concept overarching multiple strategies that make learners more effective.
- ? As well as teaching curriculum content, it is also important to teach *how* to learn. Teaching self-regulated learning strategies can provide pupils with the tools to maximise their achievement.
- ? Self-regulated learning requires pupils to take greater responsibility for their learning and develop their understanding of what is required to succeed.

Why is self-regulated learning important?

- ★ Self-regulated learning is seen as a potentially effective and low-cost way of positively impacting learning.
- ★ Research has demonstrated the positive influence of self-regulated learning on pupils' academic achievement: metacognition and self-regulation approaches have consistently high levels of impact, with pupils making an average of seven months' additional progress.
- ★ Research has demonstrated that both primary and secondary school aged pupils can learn how to self-regulate their learning and this requires teachers to adapt their teaching according to pupils' capacities.
- ★ Research indicates that teaching self-regulated learning strategies can be particularly effective for low achieving pupils.

Why prioritise participating in this research?

- ◆ Self-regulated learning has been declared to be one of the major competencies for 21st century learners.
- ◆ Despite self-regulated learning being a teachable skill and evidence that self-regulated learning strategies can be integrated into classroom lessons with beneficial effects, research suggests that this practice is not widespread.
- ◆ Research has yet to investigate teachers' perceptions of supporting self-regulated learning in the UK, although a recent article in *Impact*, a UK journal of the Chartered College of Teaching, highlighted that teachers are not always clear about what metacognition and self-regulated learning means or what it looks like in the classroom.
- ◆ I am interested in teachers' views about self-regulated learning, and I am looking to interview teachers with varying degrees of experience / familiarity in this area. To participate in this research, you do not have to have extensive knowledge or have received training in this area. The interview will consist of a number of questions with opportunities for discussion.

If you are currently a teacher in the UK, please consider taking part in this research.

References

Education Endowment Foundation (2018) *Metacognition and Self-Regulated Learning: Guidance Report*. London: EEF.

Mannion, J. (2020). Metacognition, self-regulation and self-regulated learning: What's the difference? *Impact, 8.* Retrieved from https://impact.chartered.college/article/metacognition-self-regulation-regulated-learning-difference/

Zimmerman, B. J. (2002). Becoming a self-regulated learner: an overview. *Theory into Practice, 41,* 64–70.

Appendix 12: Participant Consent Form August 2021

School of Psychology

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

Consent Form – Confidential data

I understand that my participation in this project will involve taking part in an online interview with the researcher (Angharad Cooze). The interview will last for approximately 45 minutes.

I understand that my participation in this research is entirely voluntary and that I can withdraw from the research at any time during the interview without giving a reason. I also understand that I can withdraw my data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

I understand that I can ask any questions at any time before, during, or after the interview. I can contact the researcher (Angharad Cooze) or the research supervisor (Dr Ian Smillie) if I have any questions.

I understand that my personal data will be processed in accordance with GDPR regulations (see privacy statement below).

I understand that at the end of the research I will be provided with additional information and feedback about the purpose of the research.

I, _____ (NAME) consent to participating in the research conducted by Angharad Cooze, School of Psychology, Cardiff University under the supervision of Dr Ian Smillie.

Signed: _____

Date: _____

Researcher Contact Details

coozean@cardiff.ac.uk

Ethics Committee Contact Details

psychethics@cardiff.ac.uk

02920870360

Research Supervisor Contact Details
Dr Ian Smillie
Professional Tutor,
Doctorate in Educational Psychology
School of Psychology,
Cardiff University Tower Building,
Park Place,
CARDIFF,
CF10 3EU.
Email: smillie@cardiff.ac.uk

Appendix 13: Demographic Information of Survey Participants

						Total
Years' teaching experience	**Less than 1**	**2-4**	**5-9**	**10-19**	**20+**	
	7	18	30	23	20	98

Age of pupils taught	**Nursery**	**Primary school**	**Secondary school**	
	7	49	55	111

Location	**England**	**Wales**	
	76	22	98

Subject Taught	Count
Ancient and / or modern foreign languages	22
Art and Design	45
Citizenship	25
Computing	45
Design and Technology	42
English	57
Gaelic	0
Geography	49
History	44
Maths	59
Music	41
Personal, Social and Health Education (PSHE)	52
Physical Education	45
Religious Education	48
Science	58
Welsh	4
Other	17
Total	653

Other subjects taught:

Environmental Systems and Societies
French
Eyfs
Psychology
Sign Language
BTEC VOCATIONAL
Psychology
Welsh Bac
Drama
Understanding the World (EYFS) / Communication (SEND School)
Skills Challenge
Specialist Teacher

Appendix 14: Survey Instrument

Teachers' perceptions of supporting self-regulated learning

Start of Block: Info sheet

QX **Understanding teachers' perceptions of supporting self-regulated learning**

The working title for this research is "Understanding teachers' perceptions of supporting self-regulated learning", and it is being conducted by Angharad Cooze, and supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning. As part of this research, I am collecting online survey data. If you are interested in taking part in an online interview in addition to completing this survey, there is information at the end of the survey about how you may do this.

The survey will consist of 16 questions (the majority of which are multiple choice), and will take approximately 8 minutes to complete.

If you choose to complete this survey, the research information you provide will be held totally anonymously, so that it is impossible to trace this information back to you individually.

If you are willing to give consent to take part in this research, please proceed to the next page.

Researcher Contact Details: coozean@cardiff.ac.uk
Research Supervisor Contact Details: smillie@cardiff.ac.uk
Ethics Committee Contact Details: psychethics@cardiff.ac.uk ; 029 2087 0360

End of Block: Info sheet

Start of Block: Consent form

QXX Consent form

I understand that my participation in this project will involve completing an online survey about my understanding, beliefs, and perceptions of supporting self-regulated learning, which will require approximately eight minutes of my time.

I understand that participation in this study is entirely voluntary and that I can withdraw from the study at any time without giving a reason.

I understand that I am free to ask any questions at any time (by emailing the researcher in the first instance). I am free to withdraw or discuss my concerns with the researcher, Angharad Cooze or the supervisor, Dr Ian Smillie.

I understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study.

I understand that the research information provided by me will be held totally anonymously, so that it is impossible to trace this information back to me individually. I understand that this information may be retained indefinitely or published.

Researcher Contact Details: coozean@cardiff.ac.uk
Research Supervisor Contact Details: smillie@cardiff.ac.uk
Ethics Committee Contact Details: psychethics@cardiff.ac.uk ; 029 2087 0360

○ I have read the information above and I consent to participate in the study conducted by Angharad Cooze, School of Psychology, Cardiff University with the supervision of Dr Ian Smillie. (1)

○ I do not give consent to participate in this study. (2)

Skip To: End of Survey If Consent form I understand that my participation in this project will involve completing an onli... = I do not give consent to participate in this study.

End of Block: Consent form

Start of Block: Demographic Information

Q1 Years' teaching experience

- ○ Less than 1 year (1)
- ○ 2-4 years (2)
- ○ 5-9 years (3)
- ○ 10-19 years (4)
- ○ 20+ years (5)

Q2 Age of pupils taught (please select all that apply)

- ☐ Nursery age (1)
- ☐ Primary school age (2)
- ☐ Secondary school age (3)

Q3 Where are you currently teaching?

- ☐ England (1)
- ☐ Northern Ireland (2)
- ☐ Scotland (3)
- ☐ Wales (4)
- ☐ Other (5)

Skip To: End of Survey If Where are you currently teaching? = Other

---

Q4 Subjects taught (please select all that apply)

- [ ] Ancient and / or modern foreign languages (1)
- [ ] Art and Design (2)
- [ ] Citizenship (3)
- [ ] Computing (4)
- [ ] Design and Technology (5)
- [ ] English (6)
- [ ] Gaelic (7)
- [ ] Geography (8)
- [ ] History (9)
- [ ] Maths (10)
- [ ] Music (11)
- [ ] Personal, Social and Health Education (PSHE) (12)
- [ ] Physical Education (13)
- [ ] Religious Education (14)
- [ ] Science (15)
- [ ] Welsh (16)
- [ ] Other (17) _____

End of Block: Demographic Information

Start of Block: Block 1

Q5 How familiar are you with the term 'Self-regulated Learning'?

- ○ Not at all familiar (1)
- ○ Slightly familiar (2)
- ○ Moderately familiar (3)
- ○ Very familiar (4)
- ○ Extremely familiar (5)

Q6 Please write a brief definition about what self-regulated learning means to you.

_____

Q7 Have you received any training on self-regulated learning?

- ○ No (1)
- ○ Yes (please briefly describe type / nature of training) (2)

_____

End of Block: Block 1

Start of Block: Block 2

Q8 On a scale of 1 to 5, how much do the following definitions align with your own views about what self-regulated learning is? (*1 = does not align with my views, 5 = completely aligns with my views*)

	1	2	3	4	5
Self-regulated learning is the process of systematically organising one's thoughts, feelings and actions to attain one's goals. ()					
Self-regulated learning is the ability to plan, monitor, and evaluate learning. ()					

Q9 For your pupils, how important do you think self-regulated learning skills are for their learning?

- Not at all important (1)
- Slightly important (2)
- Moderately important (3)
- Very important (4)
- Extremely important (5)

Q10 In your opinion, how important is it for teachers to teach their pupils self-regulated learning skills in addition to content knowledge?

- ○ Not at all important (1)
- ○ Slightly important (2)
- ○ Moderately important (3)
- ○ Very important (4)
- ○ Extremely important (5)

Q11 Do you think all pupils can learn to self-regulate their learning?

- ○ No (please provide details) (1) _____
- ○ Yes (please provide details) (2) _____

Q12 Please consider the following statements and rate them on a scale of 1 to 5 (*where 1 = strongly disagree and 5 = strongly agree*)

	1	2	3	4	5
Pupils should be able to make decisions about the sequence and duration of their learning activities more often. ()					
Pupils have the capacity to determine what they want to learn. ()					
Each pupil should be given the opportunity to regulate their own learning. ()					
Self-regulated learning is practicable in primary education. ()					
Self-regulated learning provides pupils with a more thorough preparation for their transition to secondary education. ()					

Q13 On a scale of 1 to 5, how confident do you feel in your ability to promote pupils' self-regulated learning? (*1 = not confident at all, 5 = extremely confident*)

	1	2	3	4	5
Confidence ()					

Q14 What might make teachers feel more confident in helping pupils to develop their self-regulated learning skills?

_____

_____

_____

_____

_____

End of Block: Block 2

Start of Block: Block 3

Q15 What might need to be in place for a teacher to adopt a self-regulated learning approach in their class?

_____

Q16 Which teacher behaviours are important when supporting pupils' self-regulated learning? (*please drag the statements into the boxes below and rank them*)

Important (rank in order of importance, most important first)	Not important (rank in order of unimportance, most unimportant first)
_____ Describing self-regulated learning to pupils (1)	_____ Describing self-regulated learning to pupils (1)
_____ Encouraging pupils to monitor their learning process (2)	_____ Encouraging pupils to monitor their learning process (2)
_____ Encouraging pupils to use goal setting when planning for a learning task (3)	_____ Encouraging pupils to use goal setting when planning for a learning task (3)
_____ Encouraging pupils to reflect on and evaluate after a learning task (4)	_____ Encouraging pupils to reflect on and evaluate after a learning task (4)
_____ Encouraging pupils to track their progress through a learning task (5)	_____ Encouraging pupils to track their progress through a learning task (5)
_____ Enhancing pupils' self-motivational beliefs (6)	_____ Enhancing pupils' self-motivational beliefs (6)

End of Block: Block 3

Start of Block: Block 4

QXXXX If you would be interested in taking part in an online interview to further explore your perceptions of supporting self-regulated learning, please contact **coozean@cardiff.ac.uk** for further information.

An interview would last for approximately 45 minutes and can be organised at your convenience.

Please click the red button below to complete the Debrief for your responses to the survey to be logged.

End of Block: Block 4

Start of Block: Debrief form

Debrief from Understanding teachers' perceptions of supporting self-regulated learning

***** Once you have read this form, please click the red button below to complete this survey and log your responses*****

Thank you for completing this survey and participating in this research.

The working title for this research is "Understanding teachers' perceptions of supporting self-regulated learning", and it is being supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning.

You have provided research information by completing this online survey data. The research information you provided will be held totally anonymously, so that it is impossible to trace this information back to you individually.

If you have any concerns about this research or your participation in this research, you can contact the researcher, Angharad Cooze or the supervisor, Dr Ian Smillie.

Researcher Contact Details: coozean@cardiff.ac.uk
Research Supervisor Contact Details: smillie@cardiff.ac.uk
Ethics Committee Contact Details: psychethics@cardiff.ac.uk ; 029 2087 0360

*****please click the red button below to complete this survey and log your responses*****

End of Block: Debrief form

Appendix 15: Rationale for Survey Questions

Start of Block: Demographic Information

Q1 Years' teaching experience

- ○ Less than 1 year (1)
- ○ 2-4 years (2)
- ○ 5-9 years (3)
- ○ 10-19 years (4)
- ○ 20+ years (5)

Theoretical basis for collecting this data

This data was collected because, as highlighted by Braun and Clarke (2013), it is important to reflect on the relationship between your results and your sample. Furthermore, the American Psychological Association (APA, 2010) asserted that researchers must collect enough demographic information to adequately describe their sample.

Q2 Age of pupils taught (please select all that apply)

- ☐ Nursery age (1)
- ☐ Primary school age (2)
- ☐ Secondary school age (3)

Theoretical basis for collecting this data

This data was collected because, as highlighted by Braun and Clarke (2013), it is important to reflect on the relationship between your results and your sample. Furthermore, the APA (2010) asserted that researchers must collect enough demographic information to adequately describe their sample.

Q3 Where are you currently teaching?

- ☐ England (1)
- ☐ Northern Ireland (2)
- ☐ Scotland (3)
- ☐ Wales (4)
- ☐ Other (5)

Theoretical basis for collecting this data

This data was collected because, as highlighted by Braun and Clarke (2013), it is important to reflect on the relationship between your results and your sample. Furthermore, the APA (2010) asserted that researchers must collect enough demographic information to adequately describe their sample.

Skip To: End of Survey If Where are you currently teaching? = Other

Note that if participants were currently teaching outside of the UK (i.e., they selected 'Other'), they were redirected to the end of the survey to thank them for taking part (i.e., no further data was collected).

Q4 Subjects taught (please select all that apply)

- [ ] Ancient and / or modern foreign languages (1)
- [ ] Art and Design (2)
- [ ] Citizenship (3)
- [ ] Computing (4)
- [ ] Design and Technology (5)
- [ ] English (6)
- [ ] Gaelic (7)
- [ ] Geography (8)
- [ ] History (9)
- [ ] Maths (10)
- [ ] Music (11)
- [ ] Personal, Social and Health Education (PSHE) (12)
- [ ] Physical Education (13)
- [ ] Religious Education (14)
- [ ] Science (15)
- [ ] Welsh (16)
- [ ] Other (17) _____

Theoretical basis for collecting this data

This data was collected because, as highlighted by Braun and Clarke (2013), it is important to reflect on the relationship between your results and your sample. Furthermore, the APA (2010) asserted that researchers must collect enough demographic information to adequately describe their sample.

End of Block: Demographic Information

Start of Block: Block 1

Q5 How familiar are you with the term 'Self-regulated Learning'?

- ○ Not at all familiar (1)
- ○ Slightly familiar (2)
- ○ Moderately familiar (3)
- ○ Very familiar (4)
- ○ Extremely familiar (5)

Theoretical basis for collecting this data

This question addresses Research Question 1 “What do teachers understand by the term SRL?”.

Likert scale questions are a useful tool for collecting data in surveys due to their accessible ‘easy to use’ nature (Taherdoost, 2019). Research has found that a five point scale is less confusing and increases participants’ response rates (Bouranta et al., 2009).

Q6 Please write a brief definition about what self-regulated learning means to you.

_____

Theoretical basis for collecting this data

This question also addresses Research Question 1 “What do teachers understand by the term SRL?”. In line with previous research (Callan & Shim, 2019), an open-ended question was also used in order *“to prevent leading and/or limiting teachers’ conceptualizations of SRL*” (p.296). “*Using open-ended measurements that do not constrain participants’ responses with researcher assumptions nor provide item stems that may influence participant responses*” (Callan & Shim, 2019*, p.* 299)

Q7 Have you received any training on self-regulated learning?

- ○ No (1)
- ○ Yes (please briefly describe type / nature of training) (2) _____

Theoretical basis for collecting this data

This data was collected because, as highlighted by Braun and Clarke (2013), it is important to reflect on the relationship between your results and your sample. If teachers have received training on SRL, it is reasonable to assume that they may have different understandings and beliefs about SRL than those who have not received training in this area. Therefore, interpreting the results with reference to the results of this question, would be pertinent.

End of Block: Block 1

Start of Block: Block 2

Q8 On a scale of 1 to 5, how much do the following definitions align with your own views about what self-regulated learning is? (*1 = does not align with my views, 5 = completely aligns with my views*)

	1	2	3	4	5
Self-regulated learning is the process of systematically organising one's thoughts, feelings and actions to attain one's goals. ()					
Self-regulated learning is the ability to plan, monitor, and evaluate learning. ()					

Theoretical basis for collecting this data

This question also addresses Research Question 1 "What do teachers understand by the term SRL?". (Callan & Shim, 2019) asserted that it is important to identify the extent to which teachers' and researchers' definitions of SRL overlap. This question sought to identify whether researcher's definitions of SRL aligned with teachers' understanding of SRL. This question also offered teachers definitions of SRL (in case they were unfamiliar with the term), in line with research conducted by Huh and Reigeluth (2018) who also gave teachers a definition before they proceeded to answer questions regarding their beliefs and practices.

Q9 For your pupils, how important do you think self-regulated learning skills are for their learning?

- ○ Not at all important (1)
- ○ Slightly important (2)
- ○ Moderately important (3)
- ○ Very important (4)
- ○ Extremely important (5)

Theoretical basis for collecting this data

This question addresses Research Question 2 “What are teachers’ beliefs about SRL?” and was inspired by a question from a survey developed by previous research by Huh & Reigeluth (2018).

Q10 In your opinion, how important is it for teachers to teach their pupils self-regulated learning skills in addition to content knowledge?

- ○ Not at all important (1)
- ○ Slightly important (2)
- ○ Moderately important (3)
- ○ Very important (4)
- ○ Extremely important (5)

Theoretical basis for collecting this data

Like the previous question, this question also addresses Research Question 2 “What are teachers’ beliefs about SRL?” and was inspired by a question from a survey developed by previous research by Huh & Reigeluth (2018).

Q11 Do you think all pupils can learn to self-regulate their learning?

- ○ No (please provide details) (1)

_____

- ○ Yes (please provide details) (2)

_____

Theoretical basis for collecting this data

This question addresses Research Question 2 “What are teachers’ beliefs about SRL?”. Previous research has found that some teachers hold beliefs about individual differences among students that have implications for the promotion of SRL (e.g., Heirweg et al., 2021; Lawson et al., 2019; Peeters et al., 2016). Previous research has suggested that it is relevant to explore teachers' beliefs in the influences of student characteristics on their SRL-promoting practices (Lau, 2013). The open-ended component of this question allowed for participants to expand on and justify their reasoning, without prompting or leading participants to give reasons previously identified by teachers in the literature or hypothesised by the researcher. This question also allowed for participants to give reasons related to systemic/contextual factors such as school priorities, the impact of previous teaching, expectations etc.

Q12 Please consider the following statements and rate them on a scale of 1 to 5 (*where 1 = strongly disagree and 5 = strongly agree*)

	1	2	3	4	5
Pupils should be able to make decisions about the sequence and duration of their learning activities more often. ()					
Pupils have the capacity to determine what they want to learn. ()					
Each pupil should be given the opportunity to regulate their own learning. ()					
Self-regulated learning is practicable in primary education. ()					
Self-regulated learning provides pupils with a more thorough preparation for their transition to secondary education. ()					

Theoretical basis for collecting this data

This question and the statements contained in it were all taken from Lombaerts et al.’s (2009) research *Development of the Self-Regulated Learning Teacher Belief Scale* in order to help to answer the current study’s second research question “What are teachers’ beliefs about SRL?”.

Q13 On a scale of 1 to 5, how confident do you feel in your ability to promote pupils' self-regulated learning? (*1 = not confident at all, 5 = extremely confident*)

	1	2	3	4	5
Confidence ()					

Theoretical basis for collecting this data

This question addresses Research Question 2 “What are teachers’ beliefs about SRL?”.

In their systematic review of the literature, Lawson et al. (2019) asserted that a belief related to SRL that needs to be considered relevant is teachers’ confidence in their capabilities to instruct students about SRL.

Q14 What might make teachers feel more confident in helping pupils to develop their self-regulated learning skills?

_____

_____

_____

_____

_____

Theoretical basis for collecting this data

This question addresses Research Question 2 “What are teachers’ beliefs about SRL?” and expands on the previous question by asking participants what may help teachers to feel more confident in this area.

End of Block: Block 2

Start of Block: Block 3

Q15 What might need to be in place for a teacher to adopt a self-regulated learning approach in their class?

_____

Theoretical basis for collecting this data

This question aimed to explore perceived barriers or facilitators to SRL, addressing Research Question 2 “What are teachers’ beliefs about SRL?”. The open-ended format allowed for participants to provide their answers without prompting or leading them to give reasons previously identified by teachers in the literature or hypothesised by the researcher. Previous research has found many perceived barriers and facilitators in this context, for example the classroom environment, access to resources, and having room in the curriculum (Alvi & Gillies, 2020).

Q16 Which teacher behaviours are important when supporting pupils' self-regulated learning? (*please drag the statements into the boxes below and rank them*)

Important (rank in order of importance, most important first)	Not important (rank in order of unimportance, most unimportant first)
_____ Describing self-regulated learning to pupils (1)	_____ Describing self-regulated learning to pupils (1)
_____ Encouraging pupils to monitor their learning process (2)	_____ Encouraging pupils to monitor their learning process (2)
_____ Encouraging pupils to use goal setting when planning for a learning task (3)	_____ Encouraging pupils to use goal setting when planning for a learning task (3)
_____ Encouraging pupils to reflect on and evaluate after a learning task (4)	_____ Encouraging pupils to reflect on and evaluate after a learning task (4)
_____ Encouraging pupils to track their progress through a learning task (5)	_____ Encouraging pupils to track their progress through a learning task (5)
_____ Enhancing pupils' self-motivational beliefs (6)	_____ Enhancing pupils' self-motivational beliefs (6)

Theoretical basis for collecting this data

This question addresses Research Question 3 “How do teachers support pupils’ SRL?”. The statements were inspired by a selection of interview items used by Spruce and Bol (2015) to assess teacher knowledge and application of SRL; these statements represent the ways in which teachers may choose to support pupils’ SRL, and participants were asked to rate these as ‘important’ or ‘not important’.

End of Block: Block 3

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Appendix 16: Semi-structured Interview Schedule

Semi-Structured Interview Schedule

Thank for agreeing to taking part.

Outline what the research is about, its purpose and why it is being conducted – opportunity for questions.

Emphasise there are no right or wrong answers to the questions – research is interested in *their views*.

Negotiate consent – although consent form has been signed, go through this, and gain verbal consent.

Ask participant to **choose a pseudonym**, explain their recording and transcribed interview will be allocated this pseudonym. Explain data collection and data storage (i.e., after two weeks the interview will be transcribed, and the recording will be deleted) and withdrawal (can withdraw up to two weeks after interview takes place). Allow opportunity for questions.

Switch on recording.

1. Can you tell me about your current teaching role?

Prompts – years' teaching experience; age of pupils taught; teacher in Wales / England / Scotland / Northern Ireland; subjects taught.

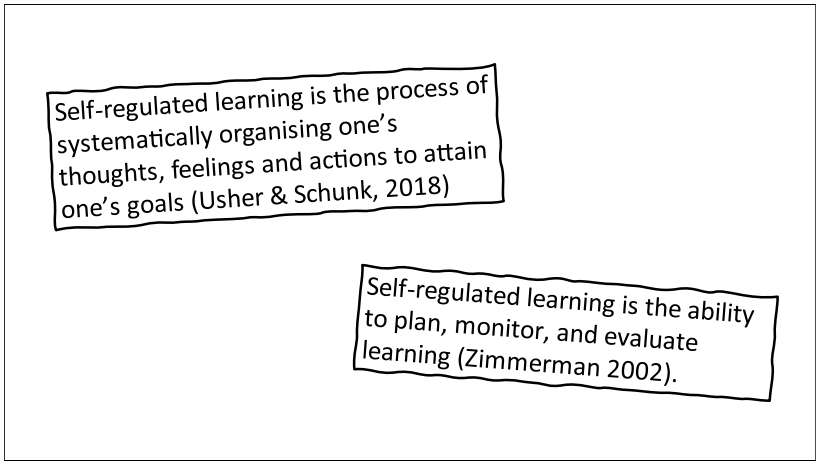
2. What are your thoughts about how children and young people learn best?
3. What do you do in your classroom to support that learning best?

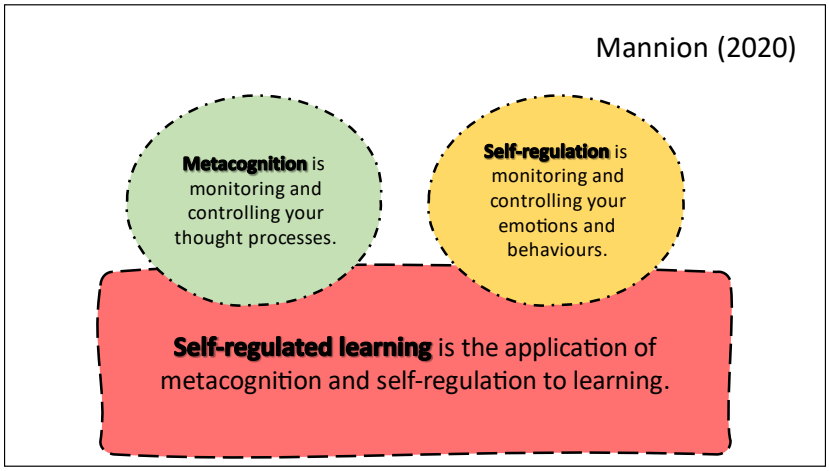
Related to Research Question *What do teachers understand by the term self-regulated learning?*

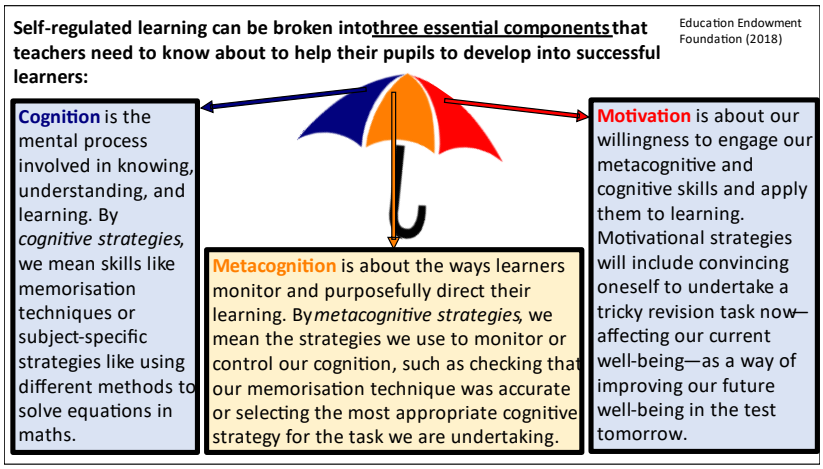
4. I would like to ask what you understand by the term 'self-regulated learning' / what does the term 'self-regulated learning' mean to you?

Prompts –

- offer definitions of SRL (share screen and discuss) :







- which of these definitions best aligns with your views on what SRL is?
- how do you think this may be this similar or different to how you think children and young people learn best?

5. Can you think of a pupil that you have taught who was really good at self-regulated learning – tell me about them and how they demonstrated that they can self-regulate their learning.

Prompts –

- how does this pupil differ from other pupils in the class? **(Related to Research Question *What are teachers' beliefs about self-regulated learning?*)**
- What skills does this pupil have that are important for self-regulated learning?
    - How important do you think these skills are for pupils? **(Related to Research Question *What are teachers' beliefs about self-regulated learning?*)**
    - Where these skills may come from – parents, peers, teachers etc.

6. Imagine if a teacher was adopting a self-regulated approach to learning their classroom, how might they describe self-regulated learning to their pupils?

Related to Research Question *How do teachers support pupils' self-regulated learning?*

7. If a teacher was going to adopt a self-regulated approach to learning in their classroom, what might this look like?

Prompts –

- How confident would/do you feel in promoting pupils' self-regulated learning? **(Related to Research Question *What are teachers' beliefs about self-regulated learning?***)
- Do you think all pupils can learn to self-regulate their learning?
- How might a teacher notice or decide that pupils are successfully self-regulating their learning?

8. *Closing Question:* I think that is basically everything I had to ask you to talk about… have you got anything else you would like to say, any other final thoughts or anything you would like to follow up that I have not asked you?

<u>End of interview questions</u>

Thank for taking part.

Further opportunity for questions.

Inform that a debrief form will be emailed to them.

Switch off recording.

Appendix 17: Rationale for (Semi-Structured) Interview Questions

Semi-Structured Interview Schedule

1. Can you tell me about your current teaching role?

Prompts – years' teaching experience; age of pupils taught; teacher in Wales / England / Scotland / Northern Ireland; subjects taught.

Theoretical basis for collecting this data (**Question 1**)

This data was collected because, as highlighted by Braun and Clarke (2013), it is important to reflect on the relationship between your results and your sample. Furthermore, the APA (2010) asserted that researchers must collect enough demographic information to adequately describe their sample.

2. What are your thoughts about how children and young people learn best?
3. What do you do in your classroom to support that learning best?

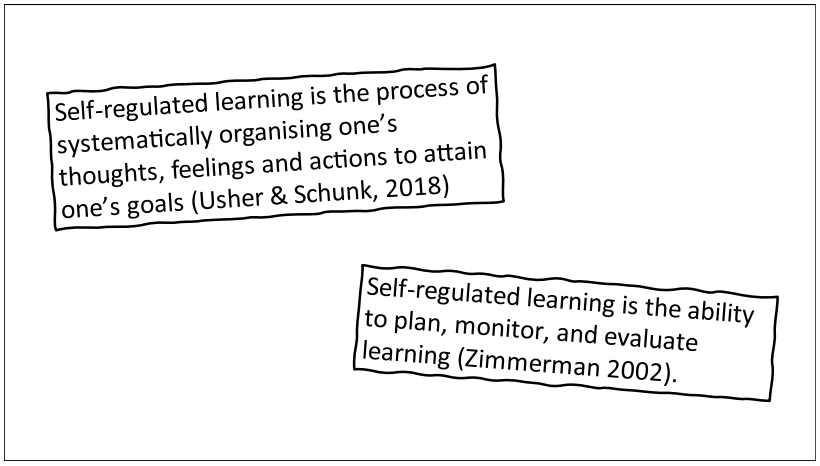
Theoretical basis for collecting this data (**Questions 2 & 3**)

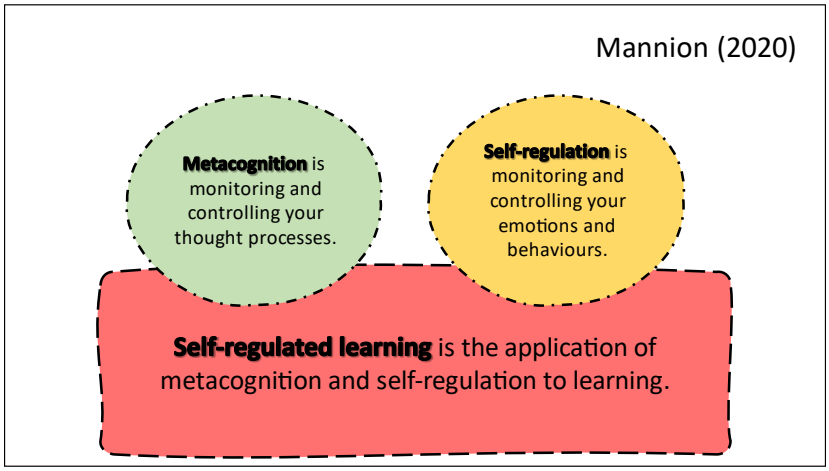
These questions were asked to help participants 'ease in' to the interview and elicit their views about teaching in general. If participants chose to explicitly discuss SRL or its components here, these questions could collect data related to any of the research questions.

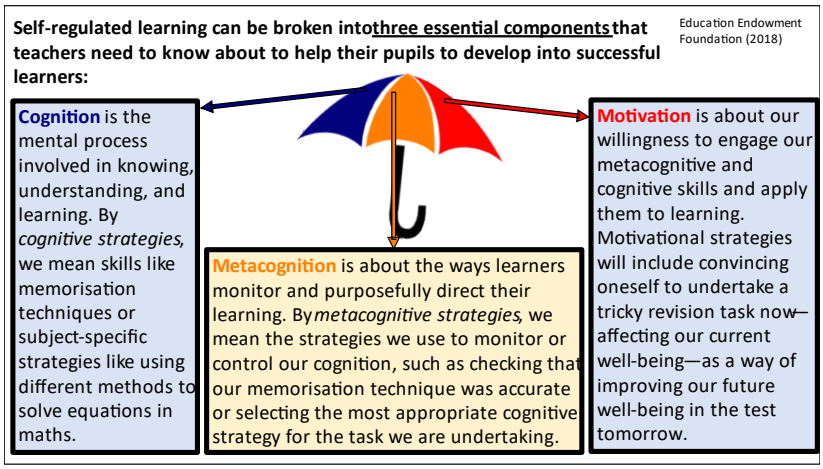
4. I would like to ask what you understand by the term 'self-regulated learning' / what does the term 'self-regulated learning' mean to you?

Prompts –

- offer definitions of SRL (share screen and discuss) :







- which of these definitions best aligns with your views on what SRL is?
- how do you think this may be this similar or different to how you think children and young people learn best?

Theoretical basis for collecting this data (**Question 4**)

This question was primarily asked to collect data relevant to Research Question 1 "*What do teachers understand by the term SRL?*". In line with previous research (Callan & Shim, 2019), an open-ended question without prompts was initially used in order *"to prevent leading and/or limiting teachers' conceptualizations of SRL*" (p.296). Following this, their understanding was explored further by discussing different definitions of SRL (e.g., how these are similar or different to their own views of SRL, for example eliciting views regarding specific components). It was recognised that data gathered here may be relevant for all research questions, due to the semi-structured nature of the interview.

5. Can you think of a pupil that you have taught who was really good at self-regulated learning – tell me about them and how they demonstrated that they can self-regulate their learning.

Prompts –

- how does this pupil differ from other pupils in the class?
- What skills does this pupil have that are important for self-regulated learning?
    - How important do you think these skills are for pupils?
    - Where these skills may come from – parents, peers, teachers etc.

Theoretical basis for collecting this data (**Question 5**)

This question was primarily asked to collect data relevant to Research Question 1 "*What do teachers understand by the term SRL?*". It was anticipated that the initial question would help explore participants' understanding of SRL by asking them to describe what it would look like. The prompts for this question were designed to collect data related to Research Question 2 "*What are teachers' beliefs about SRL?*" without leading participants into giving specific responses previously found in the literature; for example, previous research has found that some teachers hold beliefs about individual differences among students that have implications for SRL (e.g., Heirweg et al., 2021; Lawson et al., 2019; Peeters et al., 2016). It was recognised that this question could potentially provide data relevant to all research questions.

6. Imagine if a teacher was adopting a self-regulated approach to learning their classroom, how might they describe self-regulated learning to their pupils?

Theoretical basis for collecting this data (**Question 6**)

This question was primarily asked to collect data relevant to Research Question 1 "*What do teachers understand by the term SRL?*". It was anticipated that this question would help encourage participants to provide a concise definition. This question was also recognised as potentially providing data relevant to all research questions. For example, a teacher may take the opportunity here to share their belief that teachers wouldn't describe SRL to pupils as pupils would not benefit from this.

Related to Research Question *How do teachers support pupils' self-regulated learning?*

7. If a teacher was going to adopt a self-regulated approach to learning in their classroom, what might this look like?

Theoretical basis for collecting this data (**Question 6**)

This question was designed to collect data relevant to Research Question 3 "*How do teachers support pupils' SRL?*". It was anticipated that this question would help encourage participants to describe how they already promote SRL or would hypothetically promote SRL. It was recognised that this question could potentially provide data relevant to all research questions.

Prompts –

- How confident would/do you feel in promoting pupils' self-regulated learning? **(Related to Research Question *What are teachers' beliefs about self-regulated learning?*)**
- Do you think all pupils can learn to self-regulate their learning?
- How might a teacher notice or decide that pupils are successfully self-regulating their learning?

Theoretical basis for collecting this data (**Question 6**)

These prompts were designed to collect data relevant to Research Question 2 "*What are teachers' beliefs about SRL?*". Here, self-efficacy beliefs in promoting SRL were explored, and beliefs about pupils' characteristics pertinent to SRL skills. It was recognised that these prompts could potentially provide data relevant to all research questions.

8. *Closing Question:* I think that is basically everything I had to ask you to talk about… have you got anything else you would like to say, any other final thoughts or anything you would like to follow up that I have not asked you?

End of interview questions

Thank for taking part.

Further opportunity for questions.

Inform that a debrief form will be emailed to them.

Switch off recording.

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Appendix 18: Debrief Form June 2021

School of Psychology

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

The research you took part in sought to explore teachers' perceptions of supporting self-regulated learning.

The working title for this research is *"Understanding teachers' perceptions of supporting self-regulated learning"*, and it is being supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning. As part of this research, I am conducting a series of semi-structured interviews online (via Zoom) with teachers in the UK.

Participation in this research involved being interviewed individually via Zoom by myself (Angharad Cooze). The interview lasted approximately one hour. The interview was recorded and will be transcribed within two weeks, after which the recording will be deleted, and the data will be anonymised. All data has been, and will continue to be, handled confidentially. You can withdraw your data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

Once the research is completed, the findings will be shared with you if you wish.

Please let me know if you require further information or have any questions.

Regards,

Angharad Cooze

Trainee Educational Psychologist

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Appendix 19: Debrief Form August 2021

School of Psychology

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Understanding teachers' perceptions of supporting self-regulated learning

The research you took part in sought to explore teachers' perceptions of supporting self-regulated learning.

The working title for this research is *"Understanding teachers' perceptions of supporting self-regulated learning"*, and it is being supervised by Dr Ian Smillie, Cardiff University. The purpose of this research is to explore (1) what teachers understand by the term 'self-regulated learning'; (2) teachers' beliefs about self-regulated learning; and (3) how teachers support pupils' self-regulated learning. As part of this research, I am conducting a series of semi-structured interviews online (via Zoom) with teachers in the UK.

Participation in this research involved being interviewed individually via Zoom by myself (Angharad Cooze). The interview lasted approximately 45 minutes. The interview was recorded and will be transcribed within two weeks, after which the recording will be deleted, and the data will be anonymised. All data has been, and will continue to be, handled confidentially. You can withdraw your data from the research up until the point the data is anonymised by contacting the researcher (up to two weeks after the interview).

Once the research is completed, the findings will be shared with you if you wish.

Please let me know if you require further information or have any questions.

Regards,

Angharad Cooze

Trainee Educational Psychologist

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Appendix 20: Ethical Considerations

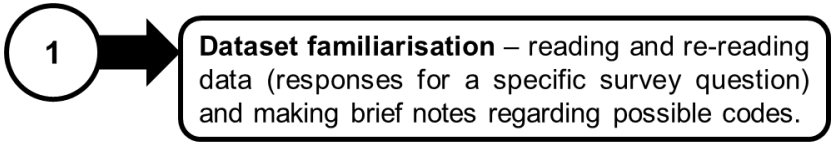
Ethical Consideration	How this was addressed (survey)	How this was addressed (semi-structured interview)
Informed consent	Participants were provided with information regarding the purpose of the research before consenting (see Appendix 11). To provide consent, participants selected a box labelled "I have read the information above and I consent to participate in the study conducted…" (see Appendix 11) before proceeding to the survey questions. Participants were also able to select a box labelled "I do not give consent to participate in this study". Participants were unable to proceed to the questions without confirming their consent.	Participants were provided with information regarding the purpose of the research before consenting (see Appendices 5 & 8) and provided written consent (Appendices 6 & 9). Verbal consent was also obtained at the beginning of the interviews after checking that participants had understood the nature of the research.
Confidentiality and anonymity	The information provided by participants was held totally anonymously so that it was impossible to trace this information back to individual participants. Furthermore, no identifying information was requested on the questionnaires.	Each participant's audio recording was stored on a password-protected device, accessible only to the researcher. Recordings were then analysed within two weeks, after which the recordings were deleted. Whilst recorded interviews cannot be considered anonymous, participants' recordings and associated transcripts were allocated pseudonyms. Participants were informed that any identifiable information disclosed in the interviews would be omitted from the transcript (Appendices 5 & 8). Transcribed interviews were anonymous as any identifiable

		information disclosed in the interviews will be omitted (including names and the names of the schools participants worked in).
Right to withdraw	Participants were made aware at the beginning of the survey of their right to withdraw at any time until their point of data submission (Appendix 11). Forced responses were only required for participants when their answer resulted in a decision point for the next question (questions relating only to demographic information).	Participants were made aware of their right to withdraw before, during, and after the interview (the latter in terms of withdrawing their data up to two weeks after participating; see Appendices 5, 6, 8, 9 and 13).
Risk of harm	No sensitive questions were asked, and it was made clear to participants that they had the right to withdraw at any time during the survey until it was completed. The researcher was contactable before, during and after participants completed the survey.	It was made clear to participants that they had the right to withdraw at any time during the interview and that they could withdraw their data up to two weeks after the interview had taken place (after which point the data would be anonymised and recordings of interviews deleted). It was not anticipated that sensitive questions were to be asked, however the researcher remained conscious of the participants' wellbeing. The researcher was also available for questions during and after the interview and was contactable thereafter.
Debriefing	A debrief form was included at the end of the survey (Appendix 11). Participants' data was not submitted until they confirmed they had read this information and	After interviews took place, participants were debriefed verbally and also received a debrief sheet (Appendices 15 and 16).

	wished to proceed with participation.	
General Data Protection Regulations (GDPR)	This project ensured compliance with the GDPR therefore participants were informed as to what personal data was to be collected, how it will be stored and for how long. They were also informed as to how their privacy will be protected (Appendix 11).	This project ensured compliance with the GDPR therefore participants were informed as to what personal data was to be collected, how it will be stored and for how long. They were also informed as to how their privacy will be protected (Appendices 5, 6, 8, and 9).

Appendix 21: Domain Summary Analyses and Extracts

Each survey question was analysed independently from the others. Therefore, each domain summary represented a single survey question.



The researcher chose to complete the analysis manually rather than using formal data analysis software.

The responses for the survey question were read and re-read and initial codes were developed at this stage according to the initial ‘noticings’. Initial ideas for codes at this stage were recorded in a notebook.

2

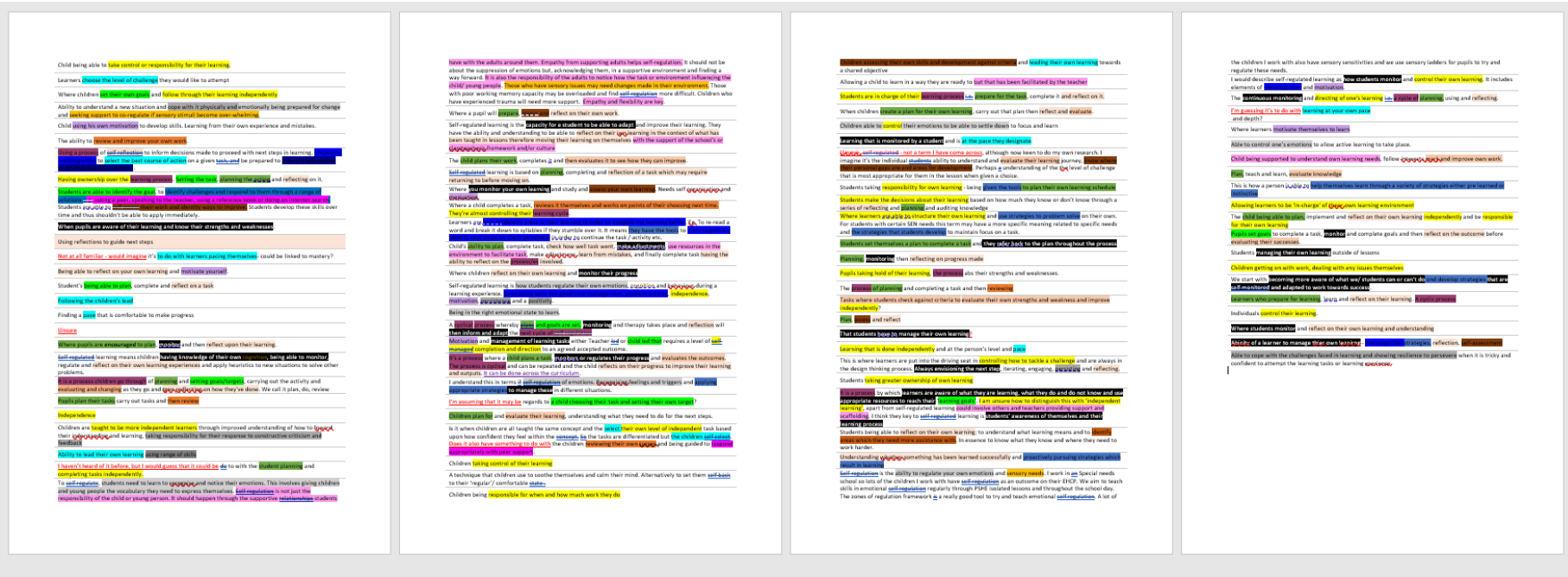
Data Coding – working systematically through the data in a fine-grained way, applying analytically-meaningful descriptions (code labels). Coding is aimed at capturing single meanings or concepts whilst capturing an 'analytic take' on the data. Finally, collating code labels and compiling the relevant segments of data for each code.

Example of a dataset (Figure 21) for a survey question (i.e., data to be used to create a single domain summary) which has been systematically coded.

At this stage, a working document was also created in Word with a table containing three columns. The first column contained the code label, the second contained all extracts for that code, and the final column noted the number of extracts for that particular code.

Figure 21

Example of a Coded Dataset



3 → **Initial sub-domain generation** – ensuring the diversity of meaning in relation to the topic/domain (i.e., the survey question) is captured by compiling clusters of codes which may provide a meaningful 'answer' to research questions. Finally, collating all coded data relevant to each candidate sub-domain.

At this stage, the working document detailed above was used to cluster codes together to create sub-domains. The first column "code label" became "sub-domain". For example, the sub-domain "The control of learning rests with the learner" included codes related to "learners taking ownership", "learners taking responsibility", "learners having control", "learners working independently", "learners being in-charge" etc.

4 → **Developing and reviewing sub-domains** – assessing the initial fit of the provisional candidate sub-domains by reviewing the data, ensuring the sub-domains are able to provide a summary of everything participants said in relation to this topic/domain (for a specific survey question). Sub-domains are not discarded but may be merged with other sub-domains where appropriate. Relationships are considered between sub-domains, existing knowledge, and the wider context of the research.

Here the survey responses were re-read to ensure the sub-domains captured all aspects of the data, providing a synopsis of the range of responses. In order to ensure this, sub-domains were not discarded, but the codes making up certain sub-domains were allocated to different sub-domains if this was deemed to be a 'better fit'. At this stage, the sub-domains were considered in relation to existing research and revised if deemed necessary.

5 → **Refining, defining and naming sub-domains** – ensuring the sub-domains within the domain summary are clearly demarcated, appropriately named and have a brief synopsis. The number of participant responses contributing to each sub-domain are provided.

The sub-domains were refined, defined and finalised, and it was ensured that each had a suitable name. For each sub-domain, the number (and percentage) of participants who had contributed to that sub-domain was noted. See Tables on next page for the working documents for each domain summary by this stage in the process.

6 → **Writing up** – presenting the diversity of meaning in relation to the domain (responses for a specific survey question) where a summary is provided for everything the participants said to capture the range of responses.

Visualisations were created for each individual domain summary and finally, analyses were written up in the Results section of the report.

Domain Summary for teachers' understanding of SRL → i.e., Question 6 of survey "*Please write a brief definition about what self-regulated learning means to you*." **(90 respondents)**		
Sub-domains	**Examples**	**Notes**
Uncertainty	*Not at all familiar - would imagine it's to do with…* *Unsure* *I haven't heard of it before, but I would guess that it could be do to with…* *I'm assuming that it may be…* *Does it also have something to do with…* *Ummm, self regulated - not a term I have come across…* *I'm guessing it's to do with…* *Tasks where students check against criteria to evaluate their own strengths and weakness and improve independently?* *That students have to manage their own learning?*	This sub-domain was found in the responses of 9 participants (10%).
SRL is a cycle / process	*… A cyclic process.* *… i.e. a cycle of planning, using and reflecting.* *It is a process by which…* *The process of planning and completing a task and then reviewing.* *…The process is cyclical and can be repeated…* *A cyclical process whereby…* *It is a process children go through of…*	13 participants (14.4%) referred to SRL as a 'process' and/or 'cycle'. All but one participant expanded on these processes / phases of the cycle.

The control of learning rests with the learner	*Having ownership over the learning process* *Child being able to take control or responsibility for their learning* *Children taking control of their learning* *Children being responsible for when and how much work they do* *…follow through their learning independently* *Students are in charge of their learning process…* *Students make the decisions about their learning…* *Pupils taking hold of their learning…* *Children getting on with work, dealing with any issues themselves* *Where learners are able to structure their own learning…* *…and completing tasks independently* *Learning that is done independently…* *…I am unsure how to distinguish this with 'independent learning'…* *… and directing of one's learning…* *This is where learners are put into the driving seat in controlling how to tackle a challenge and are always in the design thinking process…*	This sub-domain was found in the responses of 28 participants (31.1%).
Zimmerman's Forethought phase	*Where children set their own goals…* *Setting the task…* *Student's being able to plan…*	This sub-domain was found in the responses of 31 participants (34.4%).

	… a process children go through of planning and setting goals/targets… *Where a pupil will prepare…* *The child plans their work…* *Self regulated learning is based on planning…* *A cyclical process whereby plans and goals are set…* *… children create a plan for their own learning…* *Students set themselves a plan to complete a task…* *… to reach their 'learning goals'…*	
Metacognition	*Employing metacognition to select the best course of action on a given task, and be prepared to diversify approaches to achieve desired outcomes.* *I would describe self-regulated learning as how students monitor and control their own learning. It includes elements of metacognition and motivation.* *Abioity of a learner to manage thier own leanirng - metacognitive strategies…* *…carrying out the activity and evaluating and changing as they go…* *…It means they have the tools to meta cognitively identify next steps for them personally in order to continue the task / activity…* *…where a child plans a task, monitors or regulates their progress…* *Learning that is monitored by a student and is at the pace they designate* *The continuous monitoring and directing of one's learning i.e. a cycle of…*	The term *metacognition* was only explicitly stated to by four participants, however there were 46 examples (across 29 participants [32.2%] found where participants used terms which were synonymous with, or related to metacognition (e.g., monitoring; *N* = 13) or metacognitive strategies (e.g., adapting; *N* = 4).

	We start with becoming more aware of what we/ students can or can't do and develop strategies that are self monitored and adapted to work towards success. *Motivation and management of learning tasks…* *… use resources in the environment to facilitate task, make adjustmens…* *Self regulated learning means children having knowledge of their own cognition, being able to monitor, regulate…* *Self-regulated learning is how students regulate their own emotions, cognition and behaviour during a learning experience. Developing skills like good time management, problem-solving…* *… to identify challenges and respond to them through a range of solutions e.g. asking a peer, speaking to the teacher, using a reference book or doing an internet search…*	
The affective dimension of learning	*… Recognising feelings and triggers and applying appropriate strategies to manage these in different situations…* *Ability to understand a new situation and cope with it physically and emotionally being prepared for change…* *Child using his own motivation to develop skills…* *… taking responsibility for their response to constructive criticism and feedback* *Self-regulated learning is how students regulate their own emotions, cognition and behaviour during a learning experience…* *Children able to control their emotions to be able to settle down to focus and learn…* *Motivation and management of learning tasks…* *Self regulation is the ability to regulate your own emotions and sensory needs…*	16 participants (17.8%) referred to affective dimensions of learning, e.g., motivation (*N* = 7), emotions (*N* = 8), persistence (*N* = 3), etc.

	…It includes elements of metacognition and motivation. *Where learners motivate themselves to learn.* *Able to control one's emotions to allow active learning to take place.* *Able to cope with the challenges faced in learning and showing resilience to persevere when it is tricky and confident to attempt the learning tasks or learning experience.*	
Reflecting on learning	*Being able to reflect on your own learning…* *… and reflect on their own learning experiences and apply heuristics to new situations to solve other problems.* *… assess and reflect on their own work.* *… to be able to reflect on their iwn learning in the context of what has been taught in lessons therefore moving their learning on themselves…* *… completes it and then evaluates it to see how they can improve.* *… reviews it themselves and works on points of their choosing next time…* *… the child reflects on their progress to improve their learning and outputs…* *… ability to understand and evaluate their learning journey, know where their personal gaps are and areas for development…* *Students being able to reflect on their own learning; to understand what learning means and to identify areas which they need more assistance with…* *Understanding whather something has been learned successfully and proactively pursuing strategies which result in learning*	38 participants (42.2%) discussed learners using reflection (also referred to as evaluation / assessing learning / reviewing etc.). Of these, 15 participants related this reflection to pupils therefore being able to improve future learning as a result.

Importance of external factors	*Self regulation is not just the responsibility of the child or young person. It should happen through the supportive relationships students have with the adults around them. Empathy from supporting adults helps self-regulation… It is also the responsibility of the adults to notice how the task or environment influencing the child/ young people… Empathy and flexibility are key…* *… therefore moving their learning on themselves with the support of the school's or classteacher's framework and/or culture.* *… use resources in the environment to facilitate task…* *Allowing a child to learn in a way they are ready to but that has been facilitated by the teacher* *… self-regulated learning could involve others and teachers providing support and scaffolding…* *Child being supported to understand own learning needs, follow interests…*	Eight participants (8.8%) referred to the importance of external factors in SRL.

Domain Summary for nature of training received on SRL by participants → i.e., Question 7 of survey "*Have you received any training on self-regulated learning? If yes, please describe type/nature of training*." **(20 respondents)**		
Sub-domains	**Examples**	**Notes**
Personal interest in the subject.	*Not at school in my teaching capacity. I am a student of psychology at beyond masters level with an fierce interest in children and their education.* *Personal interest on metacognition lead me to extensive reading as part of ongoing action research … I took part in the chartered college of teaching's study of teacher journal clubs which involved looking at self regulated learning in different contexts.* *I've researched metacognition as the subject of my dissertation working towards a MA in education* *Through own CPD in Mathematics courses…* *No training but I have done lots of reading on metacognition with which self-regulated learning is associated.* *Self reading.*	Seven participants (35% of those who had received training) asserted that they had a personal interest in this topic which led them to research it / undertake training or CPD in this area.
Initial Teacher Training	*Through university lectures and seminars.* *During my ITT year* *Metacognitive strategies discussion during PGCE…*	Three participants (15% of those who had received training) received this training during their initial teacher training.
As part of CPD provided by school they work / have worked in	*…Through teacher training withing school* *…In house training during INSET days, twilight sessions and AOLE leader/team meetings. Linked with metacognition* *We had a twilight cpd on it.* *CPD in school.* *…In school 'training' on this topic was a disaster.*	Eight participants (40% of those who had received training) received training that was provided by their current or previous school.

As part of Psychology Degree studies	*It has briefly been covered in my Psychology MSc* *In my Psychology undergraduate degree*	Two participants (10% of those who had received training) covered SRL as part of a Psychology degree.
Participants deliver training on SRL themselves to others	*I delivered whole school CPD as part of a project I designed* *I attend workshops and teacher training sessions on the subject and personally deliver CPD sessions to school Art communities based on the subjects of promoting self directed study, process of making and thinking like an innovator.* *… then led sessions on this to the rest of our teaching staff based off my training.*	Three participants (15% of those who had received training) also deliver training on this topic to others.

Domain Summary for reasons not all pupils can learn to self-regulate their leaning → i.e., Question 11 of survey "*Do you think all pupils can learn to self-regulate their learning? If no, please provide details*." **(24 respondents)**		
Sub-domains	**Examples**	**Notes**
Special Educational Needs / Additional Learning Needs	*Some pupils will always need adult support… This might be due to SEMH needs or SEND* *I think students with complexed additional needs may need support in all elements of self-regulated learning (planning, completing and reflecting). As I do teach students who cognitively struggle to work independently, I think they would find self regulated learning very difficult.* *Some children struggle to self regulate, particularly SEND* *Some with special needs will struggle.* *…Very few will have cognitive disabilities which make self-regulation impossible.*	Ten participants (41.7% of those who responded 'no' to this question) felt that Special Educational Needs / Additional Learning Needs may impede some pupils to learn SRL.
Parenting / home support	*Depends on home/life experience…* *Many pupils lack any basics understanding of the responsibility to complete work themselves. This is often reinforced by parents…* *…Also dependent on home support student receives…* *Distractions at home will prevent many…*	Four participants (16.7% of those who responded 'no' to this question) asserted that home life experiences can impact on whether pupils are able to develop their SRL.
Dependent on ability	*Would depend on their abilities* *Some students … might lack the ability to self-reflect*	Two participants (8.3% of those who responded 'no' to this question) posited that some pupils would not be able to self-regulate their learning due to their abiltiy.
Pupils not wanting to learn this	*I can think of many childten I have come across who … are very very reluctact to improve their learning once they have perceived that theybhave finished.*	Four participants (16.7% of those who responded 'no' to this question) felt that some pupils

	In today's society it is becoming increasingly harder to encourage a child to want to learn for themselves naturally *…To become reflective is a skill and needs to be taught. I find this is most challenge with apathetic students - which are not necessarily the lower ability. Supporting students to care is the most challenging part of our job.*	simply do not want to learn to self-regulate their learning.
Dependant on prerequisite skills	*… self-regulation at secondary level entirely dependent on adequate literacy and basic skills being taught in primary.*	One teacher suggested that there are prerequisite skills needed in order to develop SRL capacities.
Age	*Younger pupils may be able to use highly structured forms of monitoring their knowledge and planning, but not intuitively compared to more independent sixth form students*	One teacher suggested that age may contribute to pupils' ability to self-regulate their learning.

Domain Summary for reasons all pupils can learn to self-regulate their leaning → i.e., Question 11 of survey "*Do you think all pupils can learn to self-regulate their learning? If yes, please provide details*." **(66 respondents)**		
Sub-domains	**Examples**	**Notes**
Importance of (good quality) teaching/ support	*Whilst self regulation may at first seem an intangible idea, framed in the way and explicitly taught it is accessible to most learners…* *… If a child with additional needs has been given inappropriate work or is not given support, however self-regulated they are, they will struggle. We all exist within social relationships and need to be aware of the balance of power. Children and young people are not in charge of the national curriculum and many of Ofsted's Send reviews highlight that those with additional needs are often left unsupported.* *With effective teaching and modelling across all subjects…* *… there would need to be flexibility around this within every class to suit the individual needs of the learners* *With explicit modelling and time invested into the skill it has been proven that children can learn to self regulate* *If given the right tools and guidance* *Given the right tools and taught in multiple different way dependent on the child's learning style. Every child can regulate their own learning* *With the correct support and skills, I'm sure it would be achievable…* *If it is a culture that is in the school children grow up with the skills. But it is hard for 1 class to implement if everyone else isnt. Needs to be very controlled and teacher led at the beginning*	22 participants (33.3% of those who responded 'yes' to this question) referred to the importance of support from others (usually teachers) to develop SRL.
SRL 'looking different' in different pupils	*I suppose that even the very young or those with severe and profound learning difficulties can also learn to self regulate their learning. For example, a child simply picking up an object and throwing it (and then repeating it) is a form of self regulated learning. Child is investigating if the same thing happens to the object, if thrown multiple times.*	17 participants (25.8% of those who responded 'yes' to this question) described how SRL will look different in different learners.

	… although the level of which they do so would be dependant on their age/phase of development… *… should mean different things for different children…* *There will always be an individual 'take' on self-regulated learning depending on many factors such as school/class environment, past experiences, current home environment, family etc. However I do believe it is possible for all children to learn and develop these strategies and mindset.* *I teach pupils with ALN and this is an area that they really struggle with, but they can learn the skills to the best of their ability.* *All children should be capable of learning to self-regulate their learning to varying degrees* *…It might not look the same for every student as ability and previous learning will play a role in it as well.* *Life skill. Like communication. Huge variation in how it's done but always there to be nurtured* *To varying degrees depending on age and academic ability*	
Perceived importance of SRL for pupils	*Learners who self regulate are more likely to be engaged and motivated to learn* *…It is essential to develop strategies to be a life long learner.* *… but it should become a life long skill applies to all learning beyond the classroom.* *If children are taught the skills to self regulate their learning they can apply it independently to any work* *Reflecting on our own progress helps to make us more effective learners or understand information or ideas. Anyone can be helped to do this imo.*	Eight participants (12.1% of those who responded 'yes' to this question) described why SRL is important for pupils.

	This is the only solution to a blanket 'I don't get it!' *I teach in a specialist teaching facility… They can all manage it to some degree… It can be done though and builds their confidence in themselves and their ability.* *I have taught in an MLD special school for 17 years and have seen time and again how self-reg strategies a) have been bypassed by children's previous mainstream provision and b) have made such a difference to their learning with us.*	
Some pupils will require more support to achieve SRL	*…Children with SEN will need more support.* *… others will continue to need support from teacher until it 'clicks'…* *…although some pupils will need help to get there, especially if they have other needs going on - I think teachers input is important…* *However, some students may require more support and structure in how to achieve this (e.g those with learning difficulties)*	Five participants (7.6% of those who responded 'yes' to this question) asserted that some pupils will require more support to achieve SRL.
Pupils will learn this at different rates	*Different pupils may require different support, including different time scales…* *But at different rates…* *Children develop at different rates and some children may take longer to get there…* *…students will take different amounts of time to master it.* *…I also think it's important to consider that this process of learning can take years - even as adults it can be tricky to motivate and focus at all times* *I teach in a specialist teaching facility… They can all manage it to some degree. It does take them a very long time to learn these skills… It can be done though* *Yes eventually… I work with in a secondary special school with students with complex autism… and over a course of many years they may be able to take some concepts away from it. For example ideating what equipment they need for an*	Eight participants (12.1% of those who responded 'yes' to this question) posited that pupils will learn SRL at different rates.

	activity eg pencil for worksheet and answering basic self reflection questions about their work 'good work or bad work?'	
Will be harder for some pupils	*… although some find it more challenging that others* *I teach pupils with ALN and this is an area that they really struggle with, but they can learn the…* *To an extent and those more able and who are more greatly supported at home are more likely to be able to do this* *… some will inevitably find it more natural / easier than others…* *… others may struggle to self regulate themselves through various SEn needs*	Six participants (12.1% of those who responded 'yes' to this question) discussed how learning SRL will be harder for some pupils.

Domain Summary for what might increase teachers' confidence in this area → i.e., Question 14 of survey "*What might make teachers feel more confident in helping pupils to develop their self-regulated learning skills?*." **(84 respondents)**		
Sub-domains	**Examples**	**Notes**
Training	*High quality training.* *… Money used for creative external CPD sessions…* *More training and practical ideas for how this could be applied to a classroom in different subjects and key stages.* *Explicit CPD with many examples…* *Training to understand the aims and outcomes of self regulated learning…* *A clear understanding of what self-regulated learning is and what it might look like at different ages/stages of education. Training to equip staff with the necessary skills, resources and strategies* *Training and examples are essential…* *Training and seeing examples of it in practice for a range of year groups.* *Training, case studies…* *Training and subject-specific guidance / ideas.* *Receiving training with ready-made resources might help* *Having framework and guidance on how to teach self-regulation. Microlearning videos on techniques to explore…*	50 participants (59.5%) explicitly discussed that training/CPD would make teachers feel more confident in helping pupils to develop their SRL skills.
Teachers working together collaboratively	*Perhaps the set up of groups where teachers are able to share tried and tested techniques and strategies, and offer support to one and other.* *Working as teams or AOLEs to implement and evaluate ways to encourage self regulated learning would improve confidence. Sharing experiences across the*	11 participants (13.1%) felt that if teachers worked collaboratively to support each other in this area, it would increase their confidence.

	school and between schools after trialling. Working as a team to encourage it across key stages. *… joint planning with colleagues…* *… visiting schools where it is in place, learning from schools with a culture of it.* *Examples of this in action in similar schools in similar subjects* *… Room to discuss. Working together.*	
Support from SLT/ Local Authorities / Government	*The main obstacle is the micro-management (by management and challenge advisors) that goes on in schools…* *Less pressure from school leadership/government to reach a particular outcome* *Teachers need to feel they have permission to slow the pace and slim the curriculum for those who need it. They will then have time to teach self-regulated learning more explicitly. This will be influenced by the culture of the school and the LA or MAT…* *… Less pressure from leaders of schools to implement blanket policies towards teaching methods… Updated subject curriculums that reflect our current society and the needs of the learning and working environment today.* *Like everything confidence that if it doesn't go right, which we know is always a possiblity, we won't be judged by slt* *A reduction in the requirements of the curriculum to give breathing room to trial self-regulated learning there is too much pressure in the children and the teachers to learn each year groups content so no time for children to explore their own interests which would promote self regulated learning*	17 participants (20.2%) asserted that having the support of members of the Senior Leadership Team (SLT), and/or Local Authorities and/or the Government, would increase their confidence in this area.
Having time / having room in the curriculum	*The curriculum is currently very restricted so certain elements are required to be taught. Time constraints are likely to prevent teachers from feeling confident in developing these skills and enabling children to choose/direct their own learning.* *… The freedom to actually facilitate it rather than content pressures*	13 participants (15.5%) posited that having more time, and/or more space in the curriculum,

	…Time to discuss how it can be introduced to lessons/ school. Time in curriculum to teach it to pupils. Time for staff and pupils to reflect on the skills being taught. Autonomy in schools to allow for the above and the recoginition that all of the above will take time to introduce, reinforce, consolidate and build on *There is a huge pressure to get children to meet Age Related Expectations and the curriculum is very full …They will then have time to teach self-regulated learning more explicitly… I now work as a SENCO in an Alternative Provision. With a slimmer, more flexible curriculum, there is time to teach the language/ vocabulary skills needed. Also the curriculum can be adapted to the learners interested and needs.* *Time to deliver lessons outside of the curriculum that develop these skills…* *…time within teaching time (too much in curriculum). Teachers needs to implement self regulated learning and finding this time by teaching less, more deep.* *… Less constraints of the curriculum would 'free up' time in the school day…* *… Time in the curriculum to allow for this type of teaching.*	would increase their confidence in this area.
Access to an evidence-base	*… access to an evidence-base showing the outcomes* *… proof that it is an effective tool in the Primary classroom i.e. Real life X as studies with realistic results from a wide range of settings with a wide range of abilities from the UK…* *… And for me at least, research…* *… research results…* *… and links to evidence.* *A clearer evidence base.* *… research, trial and evaluation.*	11 participants (13.1%) felt that having a clear evidence-base for SRL would make them feel more confident in promoting pupils' SRL.

A whole school approach	*A whole school approach so that the skills and terminology are used on a regular basis by all staff* *… and consistent approach within schools…* *… in order to build an effective culture across the whole school.* *Modelling throughout the school…* *… and whole school approaches.* *Clear whole school policy of what is meant by self- regulated learning…*	Five participants asserted that having SRL embedded as a whole-school approach would help them to feel more confident in this area.
SRL literature being more accessible to teachers	*… as well as support from researchers to translate research findings into really world practices!* *Explicit CPD with many examples that demystify what self regulation could look like in their subject/phase.* *Demystifying the concept…*	Three participants suggested that the SRL literature may not be accessible to teachers.
Parental support	*… And that parents need to be involved EVERY STEP of the way.* *Support from parents in what the role of a teacher is and introducing the idea of responsibility from a you g age.*	Two participants suggested that parental support may increase their confidence in this area.

Domain Summary for perceived facilitators to supporting SRL → i.e., Question 15 of survey "*What might need to be in place for a teacher to adopt a self-regulated learning approach in their* class?" **(85 respondents)**		
Sub-domains	**Examples**	**Notes**
Training	*More staff training* *Growth mindset training amongst staff.* *Training and time, like most teacher things* *Training and understanding.* *Make it part of the pgce…*	21 participants (24.7%) explicitly discussed that training/CPD would need to be in place for a teacher to adopt a SRL approach in their class.
A whole school approach	*Whole school approach* *… Whole school policy…* *… whole school buy in* *Whole school ethos not just one teacher* *Time and willingness from whole school strategies* *A whole school consistent approach to further embed the strategies* *There needs to be a clear vision across the school*	15 participants (17.6%) asserted that a whole school approach would need to be in place.
More flexibility and autonomy for teachers to implement this	*Less monitoring! Freedom to teach without looking over your shoulder all of the time.* *Policies and freedom…* *More freedom with timetables* *The trust from senior leaders to allow teachers to be able to implement an enabling environment to promote self regulated learning.*	10 participants (11.8%) suggested that teachers having more flexibility and autonomy would need to be in place.

	Support from the school to trial new techniques *Freedom of curriculum* *less obsession with short-term targets and whole-school one-size-fits-all approaches* *Freedom and trust* *A supportive SLT, autonomy to tailor schemes of work and pace to the student in from of us*	
Support (e.g., colleagues, SLT)	*The support of a colleague, learning mentor or head of department.* *Support/supervision* *Support from other staff members* *Guidance from head* *… and the opportunity for staff to share experiences of its application in their classroom.* *A supportive SLT…* *Good working relationships…*	20 participants (23.5%) discussed how having support in place would be needed, whether this was from other teachers, SLT or a learning mentor.
Pupils need to be 'ready' for this approach	*…children understanding what and why they're doing it and teaching them how to first* *Listening skills of students* *Children to have self belief…* *Classroom learning behaviours* *…culture of excellent behaviour, aspirations and self-regulation*	Nine participants (10.6%) suggested that there are pre-requisites that pupils will need to be able to develop SRL.

	Independence skills… *Appropriate behaviour* *…good relationships with the pupils*	
Changes to the way pupils are taught	*A more child led learning approach* *…class size…* *Smaller class sizes* *…positive learning environment. Get rid of scores, % and grades* *Technology for all* *Appropriate environment and the appropriate resources* *… Less pressure on passing a specific exam in a specific time frame.* *Independence in learning as a value of the school not just given lip service*	Eight participants (9.4%) suggested that there need to be changes to the way pupils are taught, for this approach to be put in place.
Having time / having room in the curriculum	*Time to develop strategies…* *Adult capacity to facilitate and model.* *Time…* *Time, allowing children unending time toncomplete learning can be challenging with such a busy and packed timetable and curriculum.* *Curriculum time* *Time to include it in practice*	16 participants (18.8%) asserted that teachers would need time to be able to implement this approach.

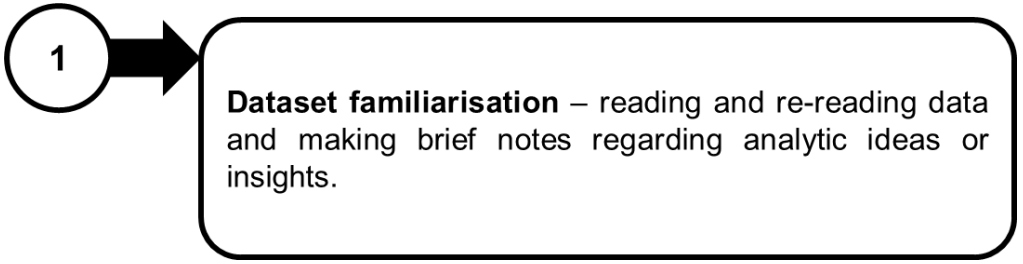
Teachers' motivation to implement	*… willingness to implement.* *… dedication to the cause* *… as well as motivation from seeing the benefits for children.*	Three participants suggested that in order to implement this approach, teachers would need to feel motivated to do so.

Appendix 22: Transcription Notation System

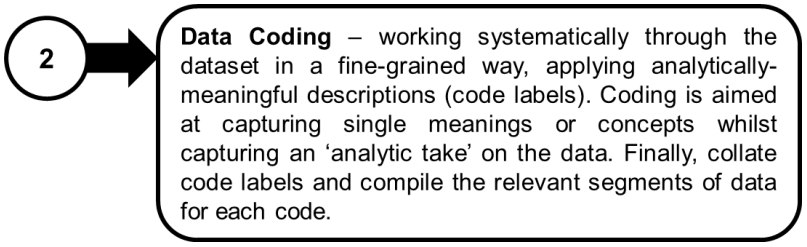
Transcription of all interview material was completed in accordance with guidance provided by Braun & Clarke (2013) for orthographic transcription.

Notation used	Meaning
[…]	Redacted passages (start of interviews relating to demographic information and work history etc.)
(.)	Short pause (second or less)
((pause))	Significant pause, lasting a few seconds or more
((laughs))	Speaker laughing
((laughter))	Participant and researcher laughing
((inaudible))	Word/brief phrase unclear
Italics	Names of media, for example, television programmes, books, etc.
Non-verbal utterances, for example, erm, er, um, mm-hm	Non-verbal utterances are spelt as felt best to that specific part of the interview.
- (dash)	Cut off speech
<u>Underlining</u>	Emphasis
‘’	Use of inverted commas to signal reported speech
?	Punctuation ‘?’ used to signal a speaker’s rising intonation of a question
[Identifying information]	Identifying information will be changed by replacing it with marked generic descriptions indicated by square brackets. For example, ‘Cardiff’ would be replaced with [city name]

Appendix 23: Reflexive Thematic Analysis and Extracts



The interviews were printed, read and re-read and notes were made by hand in relation to individual data items and the dataset on the whole.



Here, segments of data that were interesting, relevant or meaningful in relation to the research questions were given code labels. Initially, codes captured individual meanings or concepts at the semantic level, however as coding progressed, coding also captured more conceptual and implicit meaning at the latent level. A document containing each code label and where to find their corresponding extracts (relevant segments of data) was compiled (see Figure 22). Once coding of all transcripts was complete, a word document containing each code label and their corresponding extracts (relevant segments of data) was created.

Figure 22

Initial Codes

Initial Codes

New preferred / fashionable approaches 'coming and going'	Participant 1 – p2, p11 Participant 2 – p11 Participant 3 – p1, p3 Participant 4 – Participant 5 – p7
Culture of spoon feeding	Participant 1 – p1, p2, p3, p9, p12, p17 Participant 2 – p6 Participant 3 – p9 Participant 4 – Participant 5 – p8
Scaffolding and modelling	Participant 1 – p2, p4, p15, p16 Participant 2 – p2, p8 Participant 3 – p11 Participant 4 – Participant 5 –
Importance of differentiation	Participant 1 – p4, p15 Participant 2 – p2 Participant 3 – p2 Participant 4 – Participant 5 –
Content / curriculum pressures / pressure in general	Participant 1 – p5, p17 Participant 2 – p2 Participant 3 – Participant 4 – Participant 5 –
Challenge of supporting different needs / learning styles	Participant 1 – p5 Participant 2 – Participant 3 – p3 Participant 4 – Participant 5 – p2
Schools having different priorities (this determines SRL practices / teachers' knowledge?)	Participant 1 – p6, p12 Participant 2 – p1 Participant 3 – Participant 4 – Participant 5 –
Continuous Professional Development	Participant 1 – p6 Participant 2 – Participant 3 – Participant 4 – p12, p13 Participant 5 –
Knowledge of SRL	Participant 1 – p6, p10, p14 Participant 2 – p3, p5, p6, p8, p10 Participant 3 – p3, p6, p7, p8 Participant 4 – p4, p5, p7 Participant 5 – p2
Unfamiliarity with metacognition, more familiarity with motivation aspects	Participant 1 – p8, p16 Participant 2 – Participant 3 – Participant 4 – p6 Participant 5 –
Importance of consistency in implementing – or it won't work	Participant 1 – p9, p12, p13, p14 Participant 2 – p12
	Participant 3 – p4, p7 Participant 4 – p Participant 5 –
Parental influence	Participant 1 – p10, p12, p16 Participant 2 – p7 Participant 3 – Participant 4 – p9 Participant 5 – p7
Motivation and enjoyment of learning	Participant 1 – p10 Participant 2 – p7, p12 Participant 3 – p1, p2, p3, p9 Participant 4 – p2, p9 Participant 5 – p8, p11
Perceived importance of SRL	Participant 1 – p11, p17 Participant 2 – p5, p8, p12 Participant 3 – Participant 4 – p7, p13 Participant 5 – p7
Importance of explaining SRL to pupils	Participant 1 – p12 Participant 2 – p4 Participant 3 – p8 Participant 4 – p10, p11 Participant 5 –
Importance of reflecting on learning	Participant 1 – p12 Participant 2 – p9 Participant 3 – Participant 4 – p12 Participant 5 – p11
Need to build up to SRL	Participant 1 – p13, p15 Participant 2 – Participant 3 – Participant 4 – Participant 5 – p5
SRL will look different in different pupils across different subjects / year groups	Participant 1 – p14, p15, p16 Participant 2 – p11 Participant 3 – p4, p5, p8, p9 Participant 4 – Participant 5 –
Importance of whole school approach	Participant 1 – p14 Participant 2 – Participant 3 – p10 Participant 4 – Participant 5 –
A want for more information on SRL	Participant 1 – p14 Participant 2 – p10, p11 Participant 3 – Participant 4 – p12 Participant 5 –
Ability of pupils to learn SRL (age, language etc.)	Participant 1 – p16 Participant 2 – p6, p7 Participant 3 – p9 Participant 4 – p8 Participant 5 – p4, p6
A need for / wanting literature to be accessible	Participant 1 – Participant 2 – p1 Participant 3 – p5 Participant 4 – p7 Participant 5 –
Importance of peers	Participant 1 – Participant 2 – p8 Participant 3 – p5, p8 Participant 4 – Participant 5 – p7
Relevant psychological / learning theories	Participant 1 – p8 Participant 2 – p10, p2 Participant 3 – p3, p4, p7 Participant 4 – p3 Participant 5 – p4
Using self-regulation interchangeable with SRL	Participant 1 – Participant 2 – p11 Participant 3 – Participant 4 – Participant 5 –
Importance of assessment	Participant 1 – Participant 2 – p11 Participant 3 – Participant 4 – Participant 5 – p10
Props / tools to support SRL	Participant 1 – Participant 2 – Participant 3 – p5, p6 Participant 4 – Participant 5 –
All pupils are capable of SRL	Participant 1 – Participant 2 – Participant 3 – p7 Participant 4 – Participant 5 – p9
Importance of child-led activities	Participant 1 – Participant 2 – Participant 3 – p10 Participant 4 – Participant 5 –
Prerequisite needed for SRL (e.g., confidence, concentration, motivation)	Participant 1 – Participant 2 – Participant 3 – Participant 4 – p2, p8 Participant 5 – p5, p9, p10
Promoting SRL is something that is already being done / happens naturally	Participant 1 – Participant 2 – Participant 3 – Participant 4 – p7, p12 Participant 5 – p8, p11
Importance of environment and resources	Participant 1 – Participant 2 – Participant 3 – Participant 4 – p8

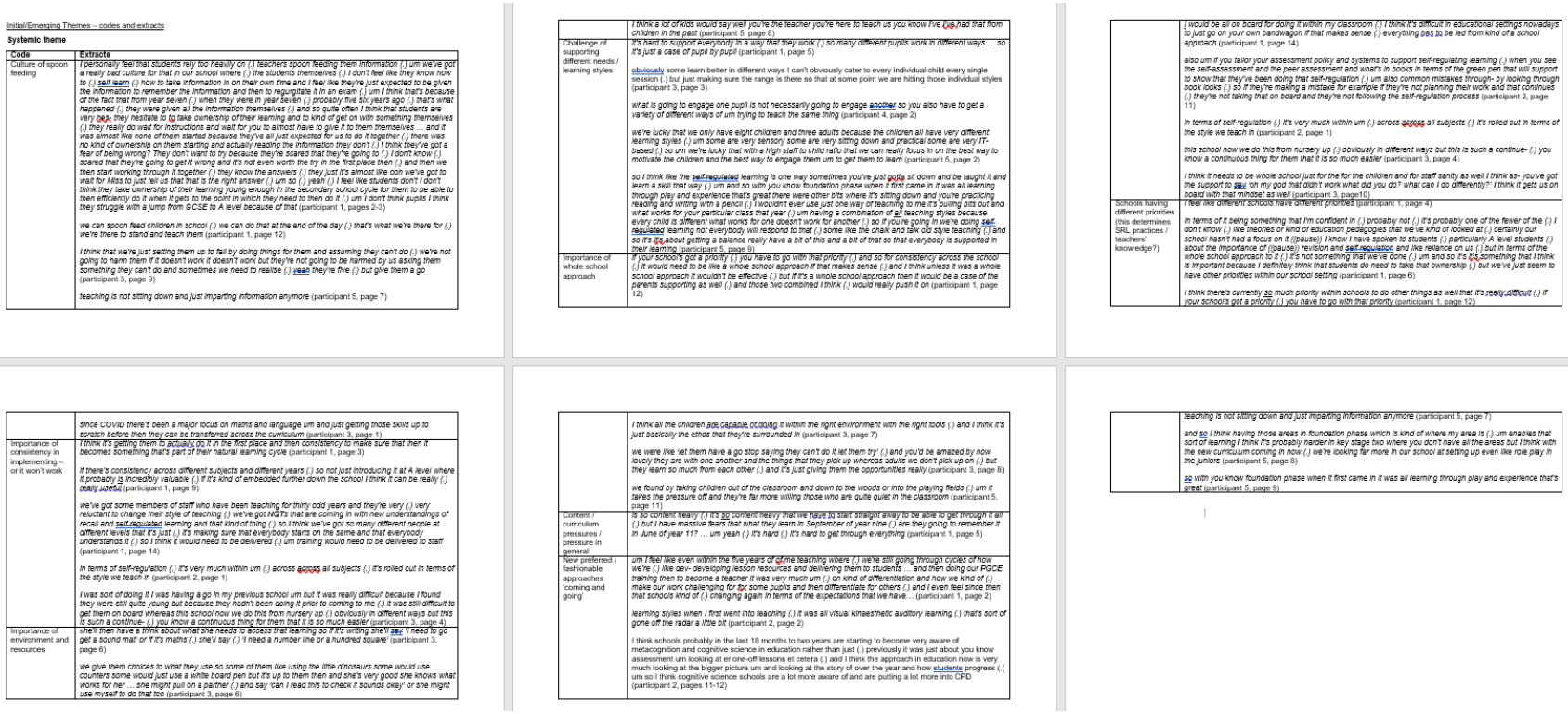
3

Initial theme generation – begin to identify shared patterned meaning *across* the dataset by compiling clusters of codes which may provide a meaningful 'answer' to research questions. Finally, collate all coded data relevant to each candidate theme.

The word document containing each code label and their corresponding extracts (relevant segments of data) was used to begin compiling clusters of codes. Five candidate themes were identified at this stage. An example of a candidate theme made up of eight code labels in presented below in Figure 23.

Figure 23

Candidate Theme Example



Initial/Emerging Themes – codes and extracts

Systemic theme

Code	Extracts
Culture of spoon feeding	*I personally feel that students rely too heavily on (.) teachers spoon feeding them information (.) um we've got a really bad culture for that in our school where (.) the students themselves (.) I don't feel like they know how to (.) self-learn (.) how to take information in on their own time and I feel like they're just expected to be given the information to remember the information and then to regurgitate it in an exam (.) um I think that's because of the fact that from year seven (.) when they were in year seven (.) probably five six years ago (.) that's what happened (.) they were given all the information themselves (.) and so quite often I think that students are very nes- they hesitate to to take ownership of their learning and to kind of get on with something themselves (.) they really do wait for instructions and wait for you to almost have to give it to them themselves … and it was almost like none of them started because they've all just expected for us to do it together (.) there was no kind of ownership on them starting and actually reading the information they don't (.) I think they've got a fear of being wrong? They don't want to try because they're scared that they're going to (.) I don't know (.) scared that they're going to get it wrong and it's not even worth the try in the first place then (.) and then we then start working through it together (.) they know the answers (.) they just it's almost like ooh we've got to wait for Miss to just tell us that that is the right answer (.) um so (.) yeah (.) I feel like students don't I don't think they take ownership of their learning young enough in the secondary school cycle for them to be able to then efficiently do it when it gets to the point in which they need to then do it (.) um I don't think pupils I think they struggle with a jump from GCSE to A level because of that* (participant 1, pages 2-3) *we can spoon feed children in school (.) we can do that at the end of the day (.) that's what we're there for (.) we're there to stand and teach them* (participant 1, page 12) *I think that we're just setting them up to fail by doing things for them and assuming they can't do (.) we're not going to harm them if it doesn't work it doesn't work but they're not going to be harmed by us asking them something they can't do and sometimes we need to realise (.) yeah they're five (.) but give them a go* (participant 3, page 9) *teaching is not sitting down and just imparting information anymore* (participant 5, page 7)
	I think a lot of kids would say well you're the teacher you're here to teach us you know I've not had that from children in the past (participant 5, page 9)
Challenge of supporting different needs / learning styles	*It's hard to support everybody in a way that they work (.) so many different pupils work in different ways … so it's just a case of pupil by pupil* (participant 1, page 5) *obviously some learn better in different ways I can't obviously cater to every individual child every single session (.) but just making sure the range is there so that at some point we are hitting those individual styles* (participant 3, page 3) *what is going to engage one pupil is not necessarily going to engage another so you also have to get a variety of different ways of um trying to teach the same thing* (participant 4, page 2) *we're lucky that we only have eight children and three adults because the children all have very different learning styles (.) um some are very sensory some are very sitting down and practical some are very IT-based (.) so um we're lucky that with a high staff to child ratio that we can really focus in on the best way to motivate the children and the best way to engage them um to get them to learn* (participant 5, page 2) *so I think like the self regulated learning is one way sometimes you've just gotta sit down and be taught it and learn a skill that way (.) um and so with you know foundation phase when it first came in it was all learning through play and experience that's great there were other bits where it's sitting down and you're practicing reading and writing with a pencil (.) I wouldn't ever use just one way of teaching to me it's pulling bits out and what works for your particular class that year (.) um having a combination of all teaching styles because every child is different what works for one doesn't work for another (.) so if you're going in we're doing self-regulated learning not everybody will respond to that (.) some like the chalk and talk old style teaching (.) and so it's ok about getting a balance really have a bit of this and a bit of that so that everybody is supported in their learning* (participant 5, page 9)
Importance of whole school approach	*If your school's got a priority (.) you have to go with that priority (.) and so for consistency across the school (.) it would need to be like a whole school approach if that makes sense (.) and I think unless it was a whole school approach it wouldn't be effective (.) but if it's a whole school approach then it would be a case of the parents supporting as well (.) and those two combined I think (.) would really push it on* (participant 1, page 12)
	I would be all on board for doing it within my classroom (.) I think it's difficult in educational settings nowadays to just go on your own bandwagon if that makes sense (.) everything has to be led from kind of a school approach (participant 1, page 14) *also um if you tailor your assessment policy and systems to support self-regulating learning (.) when you see the self-assessment and the peer assessment and what's in books in terms of the green pen that will support to show that they've been doing that self-regulation (.) um also common mistakes through- by looking through book looks (.) so if they're making a mistake for example if they're not planning their work and that continues (.) they're not taking that on board and they're not following the self-regulation process* (participant 2, page 11) *In terms of self-regulation (.) it's very much within um (.) across across all subjects (.) it's rolled out in terms of the style we teach in* (participant 2, page 1) *this school now we do this from nursery up (.) obviously in different ways but this is such a continue- (.) you know a continuous thing for them that it is so much easier* (participant 3, page 4) *I think it needs to be whole school just for the for the children and for staff sanity as well I think as- you've got the support to say 'oh my god that didn't work what did you do? what can I do differently?' I think it gets us on board with that mindset as well* (participant 3, page10)
Schools having different priorities (this determines SRL practices / teachers' knowledge?)	*I feel like different schools have different priorities* (participant 1, page 4) *In terms of it being something that I'm confident in (.) probably not (.) it's probably one of the fewer of the (.) I don't know (.) like theories or kind of education pedagogies that we've kind of looked at (.) certainly our school hasn't had a focus on it ((pause)) I know I have spoken to students (.) particularly A level students (.) about the importance of ((pause)) revision and self-regulation and like reliance on us (.) but in terms of the whole school approach to it (.) it's not something that we've done (.) um and so it's ok something that I think is important because I definitely think that students do need to take that ownership (.) but we've just seem to have other priorities within our school setting* (participant 1, page 6) *I think there's currently so much priority within schools to do other things as well that it's really difficult (.) if your school's got a priority (.) you have to go with that priority* (participant 1, page 12)
	since COVID there's been a major focus on maths and language um and just getting those skills up to scratch before then they can be transferred across the curriculum (participant 1, page 1)
Importance of consistency in implementing – or it won't work	*I think it's getting them to actually do it in the first place and then consistency to make sure that then it becomes something that's part of their natural learning cycle* (participant 1, page 3) *If there's consistency across different subjects and different years (.) so not just introducing it at A level where it probably is incredibly valuable (.) if it's kind of embedded further down the school I think it can be really (.) really useful* (participant 1, page 9) *we've got some members of staff who have been teaching for thirty odd years and they're very (.) very reluctant to change their style of teaching (.) we've got NQTs that are coming in with new understandings of recall and self-regulated learning and that kind of thing (.) so I think we've got so many different people at different levels that it's just (.) it's making sure that everybody starts on the same and that everybody understands it (.) so I think it would need to be delivered (.) um training would need to be delivered to staff* (participant 1, page 14) *In terms of self-regulation (.) it's very much within um (.) across across all subjects (.) it's rolled out in terms of the style we teach in* (participant 2, page 1) *I was sort of doing it I was having a go in my previous school um but it was really difficult because I found they were still quite young but because they hadn't been doing it prior to coming to me (.) it was still difficult to get them on board whereas this school now we do this from nursery up (.) obviously in different ways but this is such a continue- (.) you know a continuous thing for them that it is so much easier* (participant 3, page 4)
Importance of environment and resources	*she'll then have a think about what she needs to access that learning so if it's writing she'll say 'I need to go get a sound mat' or if it's maths (.) she'll say (.) 'I need a number line or a hundred square'* (participant 3, page 6) *we give them choices to what they use so some of them like using the little dinosaurs some would use counters some would just use a white board pen but it's up to them then and she's very good she knows what works for her … she might pull on a partner (.) and say 'can I read this to check it sounds okay' or she might use myself to do that too* (participant 3, page 6)
	I think all the children are capable of doing it within the right environment with the right tools (.) and I think it's just basically the ethos that they're surrounded in (participant 3, page 7) *we were like 'let them have a go stop saying they can't do it let them try' (.) and you'd be amazed by how lovely they are with one another and the things that they pick up whereas adults we don't pick up on (.) but they learn so much from each other (.) and it's just giving them the opportunities really* (participant 3, page 8) *we found by taking children out of the classroom and down to the woods or into the playing fields (.) um it takes the pressure off and they're far more willing those who are quite quiet in the classroom* (participant 5, page 11)
Content / curriculum pressures / pressure in general	*is so content heavy (.) it's so content heavy that we have to start straight away to be able to get through it all (.) but I have massive fears that what they learn in September of year nine (.) are they going to remember it in June of year 11? … um yeah (.) it's hard (.) it's hard to get through everything* (participant 1, page 5)
New preferred / fashionable approaches 'coming and going'	*um I feel like even within the five years of of me teaching where (.) we're still going through cycles of how we're (.) like dev- developing lesson resources and delivering them to students … and then doing our PGCE training then to become a teacher it was very much um (.) on kind of differentiation and how we kind of (.) make our work challenging for for some pupils and then differentiate for others (.) and I even feel since then that schools kind of (.) changing again in terms of the expectations that we have…* (participant 1, page 2) *learning styles when I first went into teaching (.) it was all visual kinaesthetic auditory learning (.) that's sort of gone off the radar a little bit* (participant 2, page 2) I think schools probably in the last 18 months to two years are starting to become very aware of metacognition and cognitive science in education rather than just (.) previously it was just about you know assessment um looking at or one-off lessons et cetera (.) and I think the approach in education now is very much looking at the bigger picture um and looking at the story of over the year and how students progress (.) um so I think cognitive science schools are a lot more aware of and are putting a lot more into CPD (participant 2, pages 11-12)
	teaching is not sitting down and just imparting information anymore (participant 5, page 7) *and so I think having those areas in foundation phase which is kind of where my area is (.) um enables that sort of learning I think it's probably harder in key stage two where you don't have all the areas but I think with the new curriculum coming in now (.) we're looking far more in our school at setting up even like role play in the juniors* (participant 5, page 8) *so with you know foundation phase when it first came in it was all learning through play and experience that's great* (participant 5, page 9)

4 → **Developing and reviewing themes** – assessing the initial fit of the provisional candidate themes by reviewing the full dataset, ensuring the themes make sense in relation to the coded extracts and the full dataset. Discarding or merging themes where appropriate and consider relationships between themes, existing knowledge, and the wider context of the research.

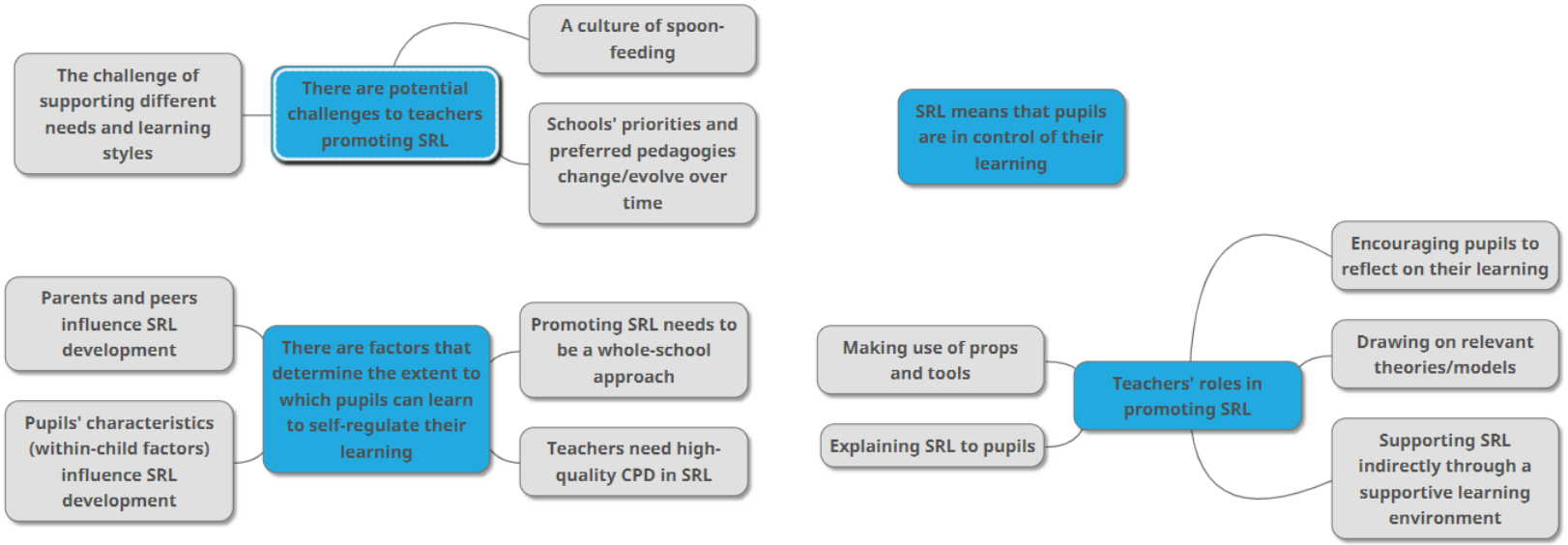
After reviewing the full dataset, it was not felt that the provisional candidate themes 'fitted' the overall dataset. Furthermore, the initial candidate themes represented topic summaries rather than shared meanings. At this stage, the researcher chose to print out all code labels and their corresponding extracts (segments of data) and cut each out to better enable 'testing' new themes. Radical revisions were made to the initial candidate themes.

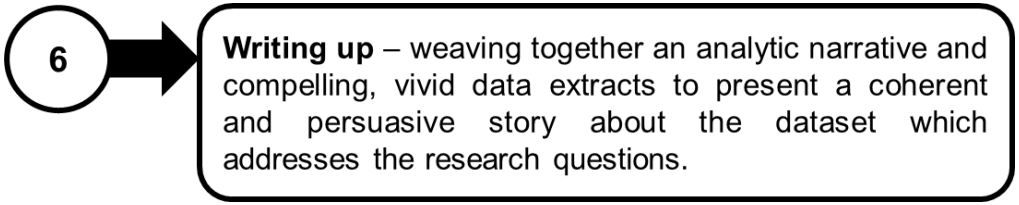
5 → **Refining, defining and naming themes** – ensuring every theme is clearly demarcated and built around a strong core concept or essence. Naming each theme and writing a brief synopsis.

The researcher moved between stages four and five many times to ensure that each theme had both a central organising concept *and* could tell a convincing and compelling story about an important pattern of shared meaning related to the dataset (and research questions). To aid this process, each theme was named and given a brief synopsis. A thematic map was also created and revised (see Figure 24 for initial named themes and subthemes). The final analysis with all extracts related to each theme and subtheme are presented in tables below.

Figure 24

Initial Thematic Map before final names were given to themes and subthemes





The final analysis was written in the Results section of the report.

All extracts related to each theme

THEME: SRL means that pupils are engaged and are in control of their learning

Extracts
she's very much somebody who enjoys learning (.) enjoys being kind of in school… so I think having the vision of where you want to go and the fact that you enjoy learning (participant 1, page 10)
and I think she was motivated in that she went on to do our subject as a degree level (.) so I don't know if she was self regulating learning for other subjects as well (.) I couldn't tell you that (.) but I don't know if it was because she had kind of a real passion for the subject and wanted to do it (participant 1, page 11)
I think this year has shown that because there are some pupils that during lockdown have been able to get on with learning and have been able to access (.) um access the work online and then motivate themselves and give themselves the kind of the skills that they need to sit down at the computer and do it (.) and then I think there are others that just don't know how to do that (.) um but I think if everybody had that understanding of self motivation (.) if they saw the outcome (.) if they saw that (.) it would perhaps support their learning throughout their school cycle and the importance of it (.) I think it's a skill that is valua- really valuable (participant 1, page 11)
I know it's something to do with the cycle of self regulation (.) where you set- students set themselves goals that they want to achieve (.) they then monitor the progress of what they're doing (.) and then they kind of reflect on how effective that was (.) and then back to the start (participant 1, page 6)
she was re teaching herself and kind of setting herself goals of each topic and was kind of creating revision material herself (.) it's kind of the October of year 13 in preparation for those essays (.) so I know that she was setting herself kind of different parts of that (.) topic to re-cover in preparation for learning the essay technique… whereas she was anticipating that coming and was working through the topics for herself (.) the rest of them would wait for us to teach the essay skills and would then go and revise the content they learned the year before (.) wait for us to

give them (.) they're kind of- like 'you need to go and learn that again now' before they'd kind of do it (.) she was anticipating it coming by teachin- reteaching herself it (participant 1, page 10)

obviously self regulating it's independent (.) so each pupil would be perhaps going about it in a slightly different way (.) but if it's new to them or if it's kind of being chunked in small activities then it might be that the same task is being given to every student to show that this is what I want the outcome to be rather than the student first of all creating their outcome for the outcome and they self regulate to that point (participant 1, page 15)

it won't all look the same for every teacher (.) for every subject (.) that there's lots of different ways that you can work on your own (.) for your learning (.) if that makes sense (participant 1, page 14)

I think key to self-regulating learning is motivation because you have motivation to really er strive to improve your grades (participant 2, page 5)

motivation is just (.) it's one of the number one because you just if you have that drive you will improve because it's it's very rare you'll just hand a piece of work and that's it you know you can improve (.) you know your weaknesses (.) you know you're in secondary school for five years (.) if you if you have that drive and analysis skills then you can improve because you know if you know your weak areas (.) you can go back and practise stuff (participant 2, page 7)

so it's very much being able to plan your work (.) it's being able to review your work (.) know your strengths (.) know your weak areas um being able to find mistakes you've made yourself and a huge is planning process (.) so rather than just starting the work there's huge steps to be focussed on before you even get to starting the work in terms of the planning phase (.) um and just using metacognition skills as well (participant 2, page 3)

it's more um taking ownership of your own learning and the work you produce (.) so it's not being hundred percent reliant on teachers (participant 2, page 3)

I think they have a lot more independence as well (.) so they're not so reliant on the teacher… for example (.) you put you haven't got top marks because you didn't know how to do an if statement (.) the self-regulated learner would then go and look at if statements and look at YouTube tutorials (.) how to do if statements (.) they wouldn't be reliant on um a lesson coming up to to tell them how to do that (.) or if there wasn't a lesson to tell them how to do that (.) they would actually approach you to ask and they'll say 'well sir you've said this but you haven't taught that how do I do it?' so they're they're inquisitive (.) they ask questions um a lot (participant 2, page 6)

my understanding is that it's about um planning what needs to be done (.) um how we going to access this activity um and then as you're doing the activity monitoring the progress (.) um how you doing what you're struggling with what what works well (.) and then upon completing it (.) sort of reflecting on the journey then and the process and taking from it then what we can for future activities (participant 3, page3) *so she's very um independent like that she's only year one but straight away knows 'I'm adding what am I going to need I'll have the counters'* (participant 3, page 6) *we give them choices to what they use so some of them like using the little dinosaurs some would use counters some would just use a white board pen but it's up to them then and she's very good she knows what works for her (.) um but she's also not afraid to say if she's trying something or 'I've picked the wrong thing by here I need to go and change it' she's very good at evaluating whether it works or not and she doesn't rely on me to say 'have a look at that' and she's just very good at reading the work back to herself (.) she might pull on a partner (.) and say 'can I read this to check it sounds okay' or she might use myself to do that too* (participant 3, page 6) *they have to want to learn so they have to um have interest and be engaged in what you're offering them in the classroom* (participant 4, page 2) *um pupils yeah taking control of their own learning I suppose (.) but I mean but what does that mean? that sounds very fuzzy doesn't it? um kind of realising that they're learning and realising how they are learning when they're learning (.) yeah (.) it doesn't sound very straightforward though* (participant 4, page 5) *so I think it's important even though they are sort of in control of their learning that you've got some adults support there to encourage and make sure everybody is involved and they all have their input and that their input is valid* (participant 5, page 6)

THEME: There are potential challenges to teachers promoting SRL

Subtheme	**Extracts**
The challenge of supporting different needs and learning styles	*it's hard to support everybody in a way that they work (.) so many different pupils work in different ways … so it's just a case of pupil by pupil* (participant 1, page 5) *obviously some learn better in different ways I can't obviously cater to every individual child every single session (.) but just making sure the range is there so that at some point we are hitting those individual styles* (participant 3, page 3) *what is going to engage one pupil is not necessarily going to engage another so you also have to get a variety of different ways of um trying to teach the same thing* (participant 4, page 2)

	we're lucky that we only have eight children and three adults because the children all have very different learning styles (.) um some are very sensory some are very sitting down and practical some are very IT-based (.) so um we're lucky that with a high staff to child ratio that we can really focus in on the best way to motivate the children and the best way to engage them um to get them to learn (participant 5, page 2) *so I think like the self regulated learning is one way sometimes you've just gotta sit down and be taught it and learn a skill that way (.) um and so with you know foundation phase when it first came in it was all learning through play and experience that's great there were other bits where it's sitting down and you're practicing reading and writing with a pencil (.) I wouldn't ever use just one way of teaching to me it's pulling bits out and what works for your particular class that year (.) um having a combination of <u>all</u> teaching styles because every child is different what works for one doesn't work for another (.) so if you're going in we're doing self regulated learning not everybody will respond to that (.) some like the chalk and talk old style teaching (.) and so it's it's about getting a balance really have a bit of this and a bit of that so that everybody is supported in their learning* (participant 5, page 9)
A culture of spoon-feeding	*I personally feel that students rely too heavily on (.) teachers spoon feeding them information (.) um we've got a really bad culture for that in our school where (.) the students themselves (.) I don't feel like they know how to (.) self learn (.) how to take information in on their own time and I feel like they're just expected to be given the information to remember the information and then to regurgitate it in an exam (.) um I think that's because of the fact that from year seven (.) when they were in year seven (.) probably five six years ago (.) that's what happened (.) they were given all the information themselves (.) and so quite often I think that students are very hes- they hesitate to to take ownership of their learning and to kind of get on with something themselves (.) they really do wait for instructions and wait for you to almost have to give it to them themselves … and it was almost like none of them started because they've all just expected for us to do it together (.) there was no kind of ownership on them starting and actually reading the information they don't (.) I think they've got a fear of being wrong? They don't want to try because they're scared that they're going to (.) I don't know (.) scared that they're going to get it wrong and it's not even worth the try in the first place then (.) and then we then start working through it together (.) they know the answers (.) they just it's almost like ooh we've got to wait for Miss to just tell us that that is the right answer (.) um so (.) yeah (.) I feel like students don't I don't think they take ownership of their learning young enough in the secondary school cycle for them to be able to then efficiently do it when it gets to the point in which they need to then do it (.) um I don't think pupils I think they struggle with a jump from GCSE to A level because of that* (participant 1, pages 2-3) *we can spoon feed children in school (.) we can do that at the end of the day (.) that's what we're there for (.) we're there to stand and teach them* (participant 1, page 12)

	I think that we're just setting them up to fail by doing things for them and assuming they can't do (.) we're not going to harm them if it doesn't work it doesn't work but they're not going to be harmed by us asking them something they can't do and sometimes we need to realise (.) yeah they're five (.) but give them a go (participant 3, page 9) *I think a lot of kids would say well you're the teacher you're here to teach us you know I've I've had that from children in the past* (participant 5, page 8)
Schools' priorities and preferred pedagogies change/evolve over time	*um I feel like even within the five years of of me teaching where (.) we're still going through cycles of how we're (.) like dev- developing lesson resources and delivering them to students … and then doing our PGCE training then to become a teacher it was very much um (.) on kind of differentiation and how we kind of (.) make our work challenging for for some pupils and then differentiate for others (.) and I even feel since then that schools kind of (.) changing again in terms of the expectations that we have…* (participant 1, page 2) *I feel like different schools have different priorities* (participant 1, page 4) *learning styles when I first went into teaching (.) it was all visual kinaesthetic auditory learning (.) that's sort of gone off the radar a little bit* (participant 2, page 2) *I think schools probably in the last 18 months to two years are starting to become very aware of metacognition and cognitive science in education rather than just (.) previously it was just about you know assessment um looking at er one-off lessons et cetera (.) and I think the approach in education now is very much looking at the bigger picture um and looking at the story of over the year and how students progress (.) um so I think cognitive science schools are a lot more aware of and are putting a lot more into CPD* (participant 2, pages 11-12) *since COVID there's been a major focus on maths and language um and just getting those skills up to scratch before then they can be transferred across the curriculum* (participant 3, page 1) *teaching is not sitting down and just imparting information anymore (.) children have to be able to find their own information and steer their learning so it's about teaching them a lesson right today we're going to learn how to do some research and find out about something* (participant 5, page 7) *and so I think having those areas in foundation phase which is kind of where my area is (.) um enables that sort of learning I think it's probably harder in key stage two where you don't have all the areas but I think with the new curriculum coming in now (.) we're looking far more in our school at setting up even like role play in the juniors* (participant 5, page 8)

	so with you know foundation phase when it first came in it was all learning through play and experience that's great (participant 5, page 9)

THEME: There are factors that determine the extent to which pupils can achieve SRL

Subtheme	**Extracts**
Promoting SRL needs to be a whole-school approach	*I think it's getting them to actually do it in the first place and then consistency to make sure that then it becomes something that's part of their natural learning cycle* (participant 1, page 3) *In terms of it being something that I'm confident in (.) probably not (.) it's probably one of the fewer of the (.) I don't know (.) like theories or kind of education pedagogies that we've kind of looked at (.) certainly our school hasn't had a focus on it ((pause)) I know I have spoken to students (.) particularly A level students (.) about the importance of ((pause)) revision and self regulation and like reliance on us (.) but in terms of the whole school approach to it (.) it's not something that we've done (.) um and so it's it's something that I think is important because I definitely think that students do need to take that ownership (.) but we've just seem to have other priorities within our school setting* (participant 1, page 6) *I mean (.) we call the students lazy sometimes because they don't <u>want to</u> do the work themselves a lot of the time (.) but when I step back and think about it it's probably because they don't know <u>how</u> to because it's not something that they're taught from a young age* (participant 1, page 9) *if there's consistency across different subjects and different years (.) so not just introducing it at A level where it probably <u>is</u> incredibly valuable (.) if it's kind of embedded further down the school I think it can be really (.) really useful* (participant 1, page 9) *I think there's currently <u>so</u> much priority within schools to do other things as well that it's really difficult (.) if your school's got a priority (.) you have to go with that priority (.) and so for consistency across the school (.) it would need to be like a whole school approach if that makes sense (.) and I think unless it was a whole school approach it wouldn't be effective (.) but if it's a whole school approach then it would be a case of the parents supporting as well (.) and those two combined I think (.) would really push it on* (participant 1, page 12) *<u>I</u> would be all on board for doing it within my classroom (.) I think it's difficult in educational settings nowadays to just go on your own bandwagon if that makes sense (.) everything has to be led from kind of a school approach* (participant 1, page 14)

	we've got some members of staff who have been teaching for thirty odd years and they're very (.) very reluctant to change their style of teaching (.) we've got NQTs that are coming in with new understandings of recall and self regulated learning and that kind of thing (.) so I think we've got so many different people at different levels that it's just (.) it's making sure that everybody starts on the same and that everybody understands it (.) so I think it would need to be delivered (.) um training would need to be delivered to staff (participant 1, page 14) *also um if you tailor your assessment policy and systems to support self-regulating learning (.) when you see the self-assessment and the peer assessment and what's in books in terms of the green pen that will support to show that they've been doing that self-regulation (.) um also common mistakes through- by looking through book looks (.) so if they're making a mistake for example if they're not planning their work and that continues (.) they're not taking that on board and they're not following the self-regulation process* (participant 2, page 11) *in terms of self-regulation (.) it's very much within um (.) across across all subjects (.) it's rolled out in terms of the style we teach in* (participant 2, page 1) *I was sort of doing it I was having a go in my previous school um but it was really difficult because I found they were still quite young but because they hadn't been doing it prior to coming to me (.) it was still difficult to get them on board whereas this school now we do this from nursery up (.) obviously in different ways but this is such a continue- (.) you know a continuous thing for them that it is so much easier* (participant 3, page 4) *I think it needs to be whole school just for the for the children and for staff sanity as well I think as- you've got the support to say 'oh my god that didn't work what did you do? what can I do differently?' I think it gets us on board with that mindset as well* (participant 3, page10)
Parents and peers also influence SRL development	*parents that pushed her to take ownership of her work (.) and they saw the importance themselves (.) they're academics* (participant 1, page 10) *having parents that are very keen to not just support you in terms of make you go to after school kind of revision sessions (.) but making you have a plan and stick to it* (participant 1, page 11) *I really strongly believe it is parents in a way… we don't follow them in the evening (.) we don't take them home um and don't kind of- … we can't monitor them all the time to make sure that they're doing that (.) so I do believe that it is (.) the parents do play a key part in it (.) I really do (.) I do think teachers (.) I think that they are a critical part of it … it would be a case of the parents supporting as well* (participant 1, page12)

	I guess maybe it's to do with the kind of the ethics of the family or the beliefs of the family or how how kind of education is embedded within them I don't know it's difficult to say (.) but we do have students that are just capable of getting on with their learning and taking ownership of it (participant 1, page 16) *um definitely comes from parents (.) um as I say a lot of self-regulation is done by motivation (.) and I think if if you're given a drive by parents parents hundred percent contribute to students' outlook on education and life… I would say it's a combination of everything parents er teachers peers and life experiences* (participant 2, pages 7-8) *um and obviously peers as well the students who who are in their friendship friendship group will have an impact (.) and I've seen that I've seen students who work very well in subjects and then in other subjects they're with peers who have a negative influence on them um so they might they might have the self-regulation skills (.) um but peers hold them back in certain subjects (.) I've also seen students who sort of maybe not think it's cool to be working in and because they are so good at self-regulation (.) even though they'd get higher grades if they worked in school (.) when they go home they use that self-regulation and are still able to get a decent grade … I would say it's a combination of everything parents er teachers peers and life experiences* (participant 2, page 8) *I well I think it's a combination (.) it is a combination (.) and obviously it depends very much on a pupil's home environment (.) um certainly it should come from it should come from school* (participant 4, page 9) *so what I'm saying was I think a teacher (.) a good teacher would provide a variety of ways of learning a skill (.) and so it <u>should</u> come from school (.) it probably comes from home less than it comes from school (.) er but again it depends on the home environment (.) and (.) you know (.) um it's not something (.) parenting in general is not something that that's taught (.) is it? so even parents are just doing what works for them (.) and they certainly well I can't imagine most parents have heard of self regulated learning and they're actively at home thinking "right this is what this is what we need to do so that our child understands self regulated learning" etcetera (.) so erm I think it probably mostly comes from the school (.) from teachers well not just teachers actually from support staff as well* (participant 4, pages 9-10) *I think some people naturally do it and I wonder is that from parents who've tried things at home and and parenting styles* (participant 5, page 7) *they're far more likely to learn from their friends and listen to their friends than they are to the adults* (participant 5, page 7)
Pupils' characteristics (within-child factors)	*I think it's very overwhelming for the student- a young student to create their own outcome (.) so I think staff might have to create the end goal and they work to reach that (.) but hopefully over time when they do it more* (participant 1, page 15)

influence SRL development	*I think some pupils are naturally better at it than the others (.) and I'm sure you've well you've probably got more reasons behind it that I have (.) I don't know why some pupils are just (.) I guess maybe it's to do with the kind of the ethics of the family or the beliefs of the family or how how kind of education is embedded within them I don't know it's difficult to say (.) but we do have students that are just capable of getting on with their learning and taking ownership of it (.) but then that doesn't always equate to them being the brightest students (.) I've got some students who will sit in silence and work for an entire hour and would happily be left alone (.) but I've then got really hyperactive students who require constant reassurance and constant questioning and constant talking to about the topic (.) but those that are left self regulating might not necessarily achieve ((pause)) do you get what I mean? I'm not equating grades to their ability to self regulate* (participant 1, page 16) *um there are pupils in our school that have additional learning needs who might show self regulation in a very different way (.) um they may not be able to do any more than two minutes on one task (.) but they might choose (.) so long as they're choosing their outcome and they're working on that themselves (.) then it might just look different to the rest of the class (.) um (.) but I think it is something that every child could access* (participant 1, page 16) *communication is one (.) I don't think they have to be (.) you know (.) they can- because obviously we'll get shy students who are self-regulated learners (.) but they have to be willing to actually ask questions so they can still be a shy student (.) they might not wanna put their hand up in class (.) but they have to have the confidence and the communication skills to ask those questions* (participant 2, page 6) *some of it is just general maturity and personality so I think I would say girls probably have those (.) generalising girls tend to have those at a younger age than boys um so that is an issue with boys (.) and I think sometimes possibly when grades are lower for boys that is because of maturity and those self-regulation skills don't really kick in until when they're at college or university (.) whereas where girls I think they generally develop them a little bit more um in high school* (participant 2, page 7) *yeah (.) I think a hundred- at different levels* (participant 2, page 11) *I was sort of doing it I was having a go in my previous school um but it was really difficult because I found they were still quite young but because they hadn't been doing it prior to coming to me (.) it was still difficult to get them on board whereas this school now we do this from nursery up (.) obviously in different ways but this is such a continue- (.) you know a continuous thing for them that it is so much easier* (participant 3, page 4) *you know obviously some to a different extent to others but they are all capable of doing this* (participant 3, page 7) *we've found that there was a big debate about whether we could do it in foundation phase* (participant 3, page 8)

	yeah definitely obviously at different levels (participant 3, page 9) *I don't know how aware the pupils in my classroom are about <u>their</u> learning process… at age yeah year three and four (.) maybe maybe some of my more able year fours probably year threes they might be beginning to start beginning to think about the way they learn (.) but I think for <u>most</u> of my class they yeah they are kind of unaware that they're in this this system of learning* (participant 4, page 7) *um yeah I suppose quite often it's kind of the more it's quite an advanced skill for a child really that (.) um there certainly at the age group <u>I'm</u> teaching (.) um so it would be the more um kind of able pupils the higher achievers generally that I can you know thinking um in my limited experience that I have really that um (.) that are able to systematically think about "right this is the task that I've got how am I going to organise myself" or "how am I am going um to take that task on board" and yeah and then to decide "right I'm going to read this bit first and then I'm going to answer that question" (.) things like that um whereas lower achievers in my class (.) yeah they're not they'd still be struggling you know for example they might not be able to read very well (.) so they're busy concentrating on or they're probably busy concentrating on um just digesting what I've said and all that you know (.) classrooms are busy busy often noisy environments (.) so there's there's probably all sorts of not self regulated learning stuff (.) but self regulation stuff that's going on there where you're trying to like block out the noise or the person next to you is trying to talk to you and you're trying to concentrate on your work* (participant 4, page 8) *I kind of thought when when we were in mainstream (.) I think it's a little bit different* (participant 5, page 2) *I think probably with the older children it it would work more I think with the young ones um I don't know (.) they probably need a little more guidance* (participant 5, page 4) *it's more about mainstream rather than in the [setting] really 'cause the children we have at the moment all have quite quite severe additional needs so they're non verbal not toilet trained (.) so I'm I'm thinking about back to my mainstream days* (participant 5, page 5) *motivation and you've got have quite good language skills… um self esteem I think is a big one because children who don't believe they can do it aren't willing to share their ideas or have ago (.) so I think that's really important* (participant 5, page 6) *yeah (.) those children who are struggling with language* (participant 5, page 9) *with supporting more and more autistic children in mainstream (.) and I think they would sometimes struggle with the lack of structure in a lesson like that (.) that's more child-led* (participant 5, page 10)

	children with speech and language difficulties and children on the spectrum would struggle with this (.) I think children with ADHD would probably struggle as well because um it's just that lack of focus and organizational skills (.) um and you know you need to develop those organizational skills but for children with ADHD (.) that doesn't always happen unless they get access to medication (participant 5, page 10)
Teachers need high-quality CPD in SRL	*I think there's a blur as well between quite a lot of educational theories and different things (.) because if you'd have said to me about self regulated learning (.) I don't know if I'd have bought in metacognition… I think I would have gone through the cycle of it (.) but I don't think I would have mentioned to you about metacognition and cognition (.) but I do know that motivation does come under it* (participant 1, page 8) *it would be something that I would definitely be interested in having (.) like an open discussion within school as to whether that's something that we could look into doing (.) um if it was something that the school decided to adopt (.) then I do feel like it would be beneficial for staff to receive kind of training INSET or like CPD sessions on that… we've got some members of staff who have been teaching for thirty odd years and they're very (.) very reluctant to change their style of teaching (.) we've got NQTs that are coming in with new understandings of recall and self regulated learning and that kind of thing (.) so I think we've got so many different people at different levels that it's just (.) it's making sure that everybody starts on the same and that everybody understands it (.) so I think it would need to be delivered (.) um training would need to be delivered to staff* (participant 1, page 14) *I've been involved in teaching and learning teams and I've been applying for jobs for teaching and learning (.) so my new job is actually assistant head teacher teaching and learning (.) so I would say I'm only confident because one doing the research for that (.) so Daniel Willingham Rosenshine's principals and the WalkThrus that's Tom Sherrington as well um who did Rosenshine's principles (.) so I think I'm only confident because of the research I've done independently* (participant 2, page 10) *in terms of general CPD that staff have I would say not that confident (.) I would say I'm aware of it but at a very very basic level* (participant 2, page 10) *I think CPD um issue is really big* (participant 2, page 11) *um pupils yeah taking control of their own learning I suppose (.) but I mean but what does that mean? that sounds very fuzzy doesn't it? um kind of realising that they're learning and realising how they are learning when they're learning (.) yeah (.) it doesn't sound very straightforward though* (participant 4, page 5) *self regulation for example one can relate that to other things in life and having read that what's in that yellow circle (.) um I'm like okay I understand that metacognition is a term it's fairly new to me* (participant 4, page 6)

	it's quite a confusing kind of it's quite an abstract um concept in some ways (participant 4, page 7) *it's quite a fuzzy area because I'd like to think that we do that as teachers anyway (.) but we wouldn't necessarily know what to call it (.) well (.) maybe I do after today ((laughter))* (participant 4, page 12) *I'd have to um do a bit of reading up about it myself (.) um it would be yeah (.) before (.) you know (.) if I when I go back into the classroom next week if this is something you know I really wanted to take charge of I'd for me personally this is how I learn anyway I'd need to have really read up about it about a bit myself (.) I'd have to make sure that I fully understand it (.) which right now still I don't so (.) yeah you know if I don't understand it (.) how on earth am I going to get a whole bunch of seven eight and nine year olds to understand it (.) yeah so yeah (.) doing some reading (.) it would be maybe get examples or you know see examples or hear of examples of other teachers how they've um taught it in their classrooms (.) that would be good (.) that goes back to my what I was saying about having (.) like a concrete example and then you can relate to it it's something that I would be able to relate to and say "oh so that teacher did it this way I could tweak that and do it this way with my class"* (participant 4, page 13) *it would be interesting to see what references there are to it kind of in everyday teacher documents (.) um because if this is something that is well (.) it sounds like something that should be done more of in school (.) like more attention should be brought to it um so it would be interesting to see if that is actually happening* (participant 4, page 13) *I would say from this um it does make me want to go and find out more about self regulated* learning (participant 4, page 13)

THEME: Teachers' roles in promoting SRL

Subtheme	**Extracts**
Making use of or providing access to props and tools	*so she's very good at establishing what she needs to do (.) she'll then have a think about what she needs to access that learning so if it's writing she'll say 'I need to go get a sound mat' or if it's maths (.) she'll say (.) 'I need a number line or a hundred square'* (participant 3, page 6) *we've devised these sea creatures and each sea creature represents like something so we might be um like (.) we've got this seahorse 'I'm proud of my work' (.) um we've got things like a crab (.) and he says (.) 'oh um I talked a lot today' which means like you've shared a lot of ideas you were really proactive (.) um so she's very good she'll go to the wall she'll choose the sea creature that suits her learning journey best then and that's how she'll self-assess* (participant 3, page 6)

	so it might be something as simple as (.) right we've gotta make a waterproof jacket for Teddy Twt (.) how are they going to work that out? how are they going to try it and then go ahead and carry out the experiment and share that with the class and then the class say and what they thought was best (.) how it could be improved (participant 5, page 6) *so setting goals… so we've got kind of like in our classes superhero boards where it's you know I want to be super at this and they set themselves a challenge of how to do it and I feel you know the self regulated learning can help them with the challenges then to you know I want to be better at sharing my ideas or I want to be better at getting my ideas down on paper or making my voice heard (.) um so I think that way (.) by setting goals that's really good for them* (participant 5, page 11)
Explaining SRL to pupils	*I think it is important to be ((pause)) to explain to the pupils that this is what we're going to teach you to do (.) and once we've taught you to do it this is a skill that you'll have for life then (.) and that you can use across all subjects (.) across all year groups (.) um I think a lot of our students do go through so many different things that it is important that they do know that this is a new skill and this is a really important skill* (participant 1, page 12) *it would then be a generalised approach er say 'don't forget your self-regulation skills don't forget metacognition skills when you're doing this piece of work'* (participant 2, page 8) *I think I just go through the steps and just use child friendly language I say 'right what do we need to do? what's our job for today?' I start off 'okay so what might we need to do this job in terms of what resources could we pull on? what prior knowledge could we reflect on um what strategies could use?'* (participant 3, page 8) *I think you should it should try to be explained (.) obviously at a very basic level… and you know it might go over the heads of most of them but there might be one or two that understand what you're saying… I sometimes think I think things are if you're not explaining to a child why for example you're doing a particular lesson or a particular activity (.) yeah they'll go along with it (.) but they will I think they will learn better they will understand it and they'll see the worth if you explain why it's happening (.) um but even that in that in itself is that's one of those things (.) again that it's more of a it's probably aimed a bit more at the higher achievers because at the level yeah the age group I teach anyway (.) because they're starting to understand more and more about the world (.) um so yes I think it should be explained very basic terms erm with an example ideally for a child… but obviously it's hard enough to explain to an adult isn't it? but imagine how to explain that to to a child (.) um but I often think if you can give like a if you can give an example that a child can relate to you know like a story of something you know related to something that they know that something that is familiar to them (.) it could just be something in the classroom (.) could be an example from home things like that* (participant 4, page 10) *so that's what I mean is to give kind of an example that they could relate to (.) I don't know what that example is but I would try and think of an example that they could relate to (.) that was a child friendly example* (participant 4, page 11)

	I think we've got to make it sound exciting to them and something they want to do because I think a lot of kids would say well you're the teacher you're here to teach us you know I've I've had that from children in the past (.) but it's about giving them the opportunity and setting up the classroom and explaining well ok this is our maths area or science area and this is what we can do in here because you know you're going to be able to learn to do this yourselves and teaching them that that independent self directed way of learning is exciting and interesting (participant 5, page 8)
Encouraging pupils to reflect on their learning	*we call it dirt time (.) like directed improvement reflection time (.) that this is your time to now respond to our feedback and to try and make that improvement (.) and I think when they were taught how to effectively feedback and effectively work on their feedback (.) then that's something which we're now we've got embedded in our school now (.) so I think it is important that they do know that this is a skill that we are teaching them and that this is a skill that they will be consistently doing across the school* (participant 1, page 12) *um but then you would have some self-assessment and also um self-reflection (.) so in terms of (.) for example my current school where with the assessment we put (.) um after we've marked it there's a space for them to self-reflect (.) so it promotes self-regulation (.) so they have to use- teachers use red pens the students use green pen (.) they have to actually go back and correct what you've what you've said* (participant 2, page 9) *and then helping them reflect and you know 'what worked well' and 'even better if'* (participant 3, page 8) *a lot of <u>reflection</u> would probably be required on the learners part (.) so (.) you know (.) you you learn a skill or you try and learn a skill (.) and then and this is something that's kind of encouraged or certainly where I work anyway (.) is that at the end of the lesson or the end of that learning <u>process</u> (.) you take pupils are meant to take a kind of take a step back and think about (.) right (.) "what did I find?" well (.) "how did that feel to me?" or you know "what did I find easy? what did I find difficult" um and I suppose (.) and then part of that might be then to ask <u>why</u> so you know if you found that particular maths skill was <u>easy</u> (.) um <u>why</u> was that I suppose?* (participant 4, page 12) *um we do a lot of peer and self-marking and monitoring (.) so they're looking at what? what is the success criteria for that lesson? um and we've done that and that works really well* (participant 5, page 11)
Drawing on relevant theories/models	*I definitely have come across metacognition because I've looked at it with (.) um like (.) recall theory (.) and is it Rosenshine's?* (participant 1, page 8) *um so the Zimmerman one was the one that I think I (.) came to learn and came to understand (.) I remember that one* (participant 1, page 8) *I think (.) cognitive science is is very valid (.) but um (.) so the cognitive science and Rosenshine's principles (.) I think Rosenshine's principles just summarise everything up (.) because otherwise it just gets a little bit too complex (.) not just*

	complex for students it gets too complex for staff as well (.) um so Rosenshine principles (.) I think are the way they learn best (.) which summarises up the cognitive science and mainly Daniel Willingham's book um Why Students Don't Like School (participant 2, pages 1-2) *um I mentioned the WalkThrus which is Tom Sherrington who produced the Rosenshine's principles book (.) um a lot of schools are starting to use that because it's sort of five simple steps um for a variety of er issues that will really er improve* (participant 2, page 12) *it would literally just come under the topic of growth mindset for us* (participant 3, page 11) *I think it's the Zimmerman one that we sort of use within our um planning* (participant 3, page 3) *I think it's the Zimmerman one in terms of how we approach it as a school* (participant 3, page 4) *because I I've sort of got the psychology background (.) that would sort of apply more to me however as a school approach then it's the more basic Zimmerman (.) like the three stage one* (participant 3, page 5) *well (.) it reminds me we (.) we've recently done a course and are having a big push with the new curriculum coming into Wales on growth mindset* (participant 5, page 4)
Supporting SRL indirectly through a supportive learning environment	*I think that the students need to be clear that (.) doing work on their own and being left (.) as (.) not teaching them if that makes sense because I think pupils sometimes have the fear that if you leave them in silence for too long then (.) you kind of- think they don't know what they're doing (.) and so I think it's something that they need to I think it would need to build up over time so I think students would need to have in year seven (.) they need to be told (.) right (.) this is now five minutes (.) you pick something that you've either want to work on (.) maybe pick a paragraph that you now want to take that paragraph and redraft it (.) or if you've got a five minute reading activity where you've got the text (.) and then you give them three questions that they then have to work those answers out themselves (.) and I think it's just building it up to them being able to do (.) kind of larger chunks of self regulated learning … I think it would need to be embedded slowly (.) because otherwise I think you'd shock a year seven if you left them to do an independent (.) entire lesson where you ask them to pick something to revise and told them to just (.) to kind of work on their plan of what they're learning themselves um so I think it would need to be chunked* (participant 1, page 13) *it won't all look the same for every teacher (.) for every subject (.) that there's lots of different ways that you can work on your own (.) for your learning (.) if that makes sense (.) and then hopefully by the time then they've worked on that over several years (.) they'll have quite a few skills then that they're able to do* (participant 1, page 14)

	I think it's very overwhelming for the student- a young student to create their own outcome (.) so I think staff might have to create the end goal and they work to reach that (.) but hopefully over time when they do it more … and so then there would be different end goals as they become more kind of used to it and it's more embedded within their learning (participant 1, page 15) *I think that all students are capable of doing it if it's <u>structured</u> and <u>scaffolded</u>* well (participant 1, page 16) *I think I think initially you would do it as a step by step and then once you've once you've been through it once (.) it would then be a generalised approach er say 'don't forget your self-regulation skills don't forget metacognition skills when you're doing this piece of work' (.) er originally when you go for it step by step (.) it's to stop them actually just jumping into the project* (participant 2, page 8) *no I think as long as it is age appropriate (.) I think all children- and you understand you know your child (.) which you going to being the class teacher (.) um I think as long as it's catered towards them (.) then it's more than accessible you know even as young as five (.) I've got them doing this* (participant 3, page 5) *I think all the children are capable of doing it within the right environment with the right tools (.) and I think it's just basically the ethos that they're surrounded in* (participant 3, page 7) *I've got some children who are obviously are more able to monitor their learning but then I got others then who (.) I'd just use my questioning throughout just to steer them back to monitoring that process 'right let's have a check now then are we on track to doing that? show me how what are we gonna do next?' and just helping them to sort of coordinate it (.) but being more of like a facilitator as opposed to an instructor then* (participant 3, page 8) *I was just going to say because it's all very well expecting the children to do it but unless we are showing we too are doing it and I'm quite vocal with my class I'm possibly a bit too open with them um and you know if something has gone wrong I'll say 'oh that didn't work did it boys and girls I won't do that next time' but it's all about like showing your mistakes and embracing them and just saying 'oh never mind let's move on' just to get that that attitude so they're not frightened of making those mistakes* (participant 3, page 11) *with a new class in September obviously I'm still getting to know them myself and I do lack confidence a little bit and I wonder oh am I pushing them too much are they able are they just not really wanting to do it or am I not motivating them enough at the moment* (participant 3, pages 8-9)

	she'll then have a think about what she needs to access that learning so if it's writing she'll say 'I need to go get a sound mat' or if it's maths (.) she'll say (.) 'I need a number line or a hundred square' (participant 3, page 6) *we give them choices to what they use so some of them like using the little dinosaurs some would use counters some would just use a white board pen but it's up to them then and she's very good she knows what works for her … she might pull on a partner (.) and say 'can I read this to check it sounds okay' or she might use myself to do that too* (participant 3, page 6) *we were like 'let them have a go stop saying they can't do it let them try' (.) and you'd be amazed by how lovely they are with one another and the things that they pick up whereas adults we don't pick up on (.) but they learn so much from each other (.) and it's just giving them the opportunities really* (participant 3, page 8) *for example (.) in language 'oh okay then so what could we do in the writing area next week?' so they might say 'oh can we write a shopping list for mami' 'yeah perfect' and all of them contribute to that it's not you know one or two… and being able to you know have an input into their own learning* (participant 3, page 10) *I think a good teacher gives provides like various like I said right at the beginning various ways of learning a skill (.) so a and then pupil A for example (.) might discover that "I've learned this best" or that they're is probably not aware of this (.) but they discover during their early school years that "I learn best" or "I enjoy" and "I learn when I'm physically doing something" (.) whereas the pupil next door to them (.) might learn best by just reading something over and over again or watching something over and over again if they're younger I suppose and then they would whatever works for them they stick with that (.) I think (.) so they're not necessarily aware that "I like I like building things by learning" that's just what they've enjoyed (.) and they've learned because they've enjoyed it or they've enjoyed it because they've learned a bit of both probably* (participant 4, page 9) *it's about you build on your prior knowledge (.) and you know once you've got that little bit of knowledge you expand on it all the time isn't it? you just don't give something without an introduction without giving it a foundation 'cause it will come crumbling down (.) so it's it's gotta build on that prior knowledge* (participant 5, page 5) *I think the more they have a go at it and do it and and if you can build on that prior knowledge or do you remember last week you did this and you had really good ideas then they're they're more likely to give it a go* (participant 5, page 6) *so I think it's important even though they are sort of in control of their learning that you've got some adults support there to encourage and make sure everybody is involved and they all have their input and that their input is valid* (participant 5, page 6)

	we found by taking children out of the classroom and down to the woods or into the playing fields (.) um it takes the pressure off and they're far more willing those who are quite quiet in the classroom (participant 5, page 11) *so we introduced the topic to the children and saying like what do we know about this already? what do we wanna find out? how are we gonna find that out? so to me I think that's kind of what they are regulating what they're learning (.) we are guiding them into how are we gonna find that out? how can we do it? and then our planning from there is planning activities that support their uh (.) sort of free time learning sort of adult focused tasks and more areas in the role play area or something (.) um an activity that's going on there (.) but you might have a an adult in there modeling the language or setting them a problem (.) how are they going to solve it and just guiding them through that problem but by being very involved in the planning and what they want to find out I I think I'm not sure that that is sort of self regulated learning* (participant 5, page 2) *it's about giving them the opportunity and setting up the classroom and explaining well ok this is our maths area or science area and this is what we can do in here because you know you're going to be able to learn to do this yourselves and teaching them that that independent self directed way of learning is exciting and interesting* (participant 5, page 8) *and so I think having those areas in foundation phase which is kind of where my area is (.) um enables that sort of learning I think it's probably harder in key stage two where you don't have all the areas but I think with the new curriculum coming in now (.) we're looking far more in our school at setting up even like role play in the juniors* (participant 5, page 8)