Developing effective English intervention strategies: To what extent does developing metacognitive awareness in lower attaining boys improve their self-regulation and self-efficacy?

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Abstract

Theory on gender and education is multifaceted and convoluted. Undeniably, boys continue to outperform girls in STEM subjects and comparatively underperform in English Language and Literature. Free School Meal (FSM) eligible White British, working-class boys have significantly lower levels of attainment than their peers. Saints College[1], a mixed secondary school in London, does not buck this trend. This research explores the reasons for this discrepancy and attempts to address it by implementing an intervention strategy focused on metacognition during reading.

The rationale for focusing on metacognition was grounded in theory. Metacognition, or 'thinking about thinking', is essential for self-regulation. Evidence suggests a link between self-regulatory behaviours, self-efficacy and academic attainment. Interventions focused on improving metacognition - and thus self-regulatory behaviours - during reading are proven to have a high effect size. Improved literacy has the potential to bolster academic attainment across the board and improve longer term outcomes for pupils.

There were three components to this research. Firstly, a questionnaire was shared with a focus group of nine FSM eligible, low attaining boys to explore their perception of their self-efficacy. Then, informed by research, a six-week intervention focused on developing metacognition during reading was delivered and evaluated. To enable for comparison, the same intervention was delivered to eight girls of a similar demographic.

Findings from this research suggest that the boys have a negative opinion of their self-efficacy concerning self-regulatory behaviours. The intervention developed metacognitive awareness but did not secure transferability of these skills cross curricular. Whilst they did outperform the boys' group, the girls were less receptive to the intervention. Consequently, further questions arise concerning the impact of social conditioning and the role of teachers' perceptions in perpetuating the gender attainment gap.

[1] Pseudonym

Contents

Introduction	
Identifying the area of research	Page 4
Saints Academy	Page 5
Literature Review	**Page 10**
What is metacognition and self-regulated learning?	Page 10
What is the relationship between metacognition and academic attainment?	Page 14
How can developing metacognition improve performance in English?	Page 18
How does this help us to understand the gender gap in UK Schools?	Page 22
Research questions	Page 29
Methodology	**Page 30**
Hypothesis	Page 30
Methods	Page 32
Collaboration	Page 38
Limitations	Page 39
Ethical Considerations	Page 41
Findings	**Page 42**
Discussion	**Page 51**
Research question one	Page 51
Research question two	Page 53
Research question three	Page 55
Conclusions and implications	**Page 58**
Conclusions	Page 58
Implications for practice	Page 60
Reference List	**Page 63**
Appendices	**Page 71**
Appendix I – Example of SRL from the Primary phase	Page71
Appendix II – Adapted self-efficacy questionnaire proforma	Page 72
Appendix III – Trace Observation proforma	Page 73
Appendix IV – Adapted IRA proforma	Page 74
Appendix V – Semi-structured interview questions	Page 76
Appendix VI – Comparison between pre-test trace annotations boys v girls	Page 77
Appendix VII – Post-test annotations boys' group	Page 78
Appendix VIII – Completed IRA sample	Page 79
Appendix IX – Completed questionnaire sample	Page 80
Appendix X – Completed trace observation record	Page 81
Appendix XI – Sample of Intervention lesson slides	Page 82

Developing effective English intervention strategies: To what extent does developing metacognitive awareness in lower attaining boys improve their self-regulation and self-efficacy?

Introduction – Identifying the area of research

Discourse and debate around gender dominated global media coverage in 2018. The #MeToo campaign and reports on the rising gender pay gap pushed gender issues to the forefront of societal concern. Gender is a multifaceted and complicated concept. However, statistics in education reveal clear and undeniable differences in the performance and experience of education across gender. This difference is evident from children's early experiences and is demonstratable throughout secondary and higher education. In 2017, media coverage reported that the gender gap at GCSE had begun to close; a six-percentage point difference existed between girls and boys achieving a grade 7 or higher – down from 7 percentage points (Dfe, 2017; Andrews, 2018). This positive outlook can be contested when one considers that 71% of female entries were awarded a pass (4 and above) compared to just 62% of males (TES, 2018; Dfe, 2017). In fact, for GCSE English Language the gap widened with 71% of female entries achieving a pass compared to just 54% of males. Conversely, boys continued to outperform girls across the sciences in maths, physics, economics and statistics (TES, 2017).

With success in STEM subjects linked to higher wages (Kirk & Scott, 2019), it seems our education system disadvantages both genders. The UN action group for girls' education suggest that this gap has implications beyond academic and salary performance suggesting that boys who are less well educated are less likely to take on roles within the domestic sphere and more likely to engage in domestic abuse and reinforce gender stereotypes for girls (Chattopadhay, 2004). Thus, closing the gender gap is of both moral and economic imperative.

What is the reason for this disparity? The UK does not have the same levels of poverty, restrictive societal norms or lack of infrastructure working as a barrier to learning as other countries (World Bank, 2019). Similarly, research suggests a lack of evidence in support of a neurological or

biological answer (Wallentin, 2009) leading many to look more closely at environmental and social causes. A 'folk pedagogy' or 'implicit assumption' that girls are better learners is rife throughout educational discourse (Bruner, 1999 pp.5). Researchers such as Dylan William suggest that the recent overhaul of the exams system favoured boys due to an increase in terminal exams and a reduction in coursework; thus, implying an assumption that girls are better at independently regulating their learning. William states (Curtis, 2009), "girls' coursework marks tend to be higher than boys…The so-called 'soft' skills like planning your work, sticking to deadlines, conscientiousness, are important for coursework". Society also purports assumptions about male learners. In 2013, Head of Admissions at Oxford University, Mike Nicholson, suggested that boys are 'better at taking risks' and do better in the sciences because of the multiple-choice nature of some assessments (Moreton, 2013). This risk-taking behaviour is further reinforced by the barrage of research into boys' behaviour which, on the whole, is deemed to be more disruptive and less conducive to learning (PISA, 2015). Maths and sciences remain 'boy subjects' and uptake of the Humanities at A Level reinforce this domain as firmly 'female' (Bussey, 2011; JCQ, 2018).

Saints College[2] does not buck this trend with most boys performing better in sciences than in humanities subjects. In 2018, boys performed better in maths with an average grade of 4.7 compared with girls' 4.1. However, in English girls achieved an average grade of 6. This was much lower for boys at 4.6. This issue is of particular relevance for Saints College; the area is served by several high performing girls' schools and as a result the current cohort is 65% male. Year 11 is the most heavily male dominated year group at 70%. Understanding the reasons for this gap in attainment and future opportunity is both an inexorable and moral concern for all teachers at Saints College.

However, it is reductionist to consider gender as a homogenous group; therefore, the question becomes *which* boys are less likely to achieve than *which* girls? Understanding the intricacies of the debate and evaluating which strategies can help to bridge this gap is integral to improving

[2] Pseudonym

social mobility and equality of opportunity at Saints College and beyond. In 2016, research from The Sutton Trust identified white working-class boys as the lowest achieving ethnic group at GCSE; this was the tenth time they had been identified as lowest or second lowest (Telegraph, 2016). For the 2017/2018 academic year, pupils eligible for Free School Meals (FSM) had an average Attainment 8[3] score of 35, 13 points lower than the average for all other pupils (DfE, 2018). This disparity is further reinforced through an analysis of school exclusions. Pupils eligible for and claiming FSM had a permanent exclusion rate of 0.28% and fixed period exclusion rate of 12.54%. This was approximately four times higher than those ineligible (DfE, 2018). Likewise, 40% of all permanent exclusions were of pupils eligible for FSM. The likelihood of being excluded was three times higher for boys than girls (DfE, 2018). Again, Saints College's data mirrors these discouraging statistics; generally, FSM boys are under achieving and receiving more behaviour sanctions than their peers. Boys eligible for FSM in Year 11 at Saints College have an average behaviour score of 0 compared to the average score of 27 in the wider cohort (the higher the better as points are deducted for negative behaviour).

What can Saints College do to narrow this gap in attainment and improve attitudes to learning? What intervention would be most effective? Understanding what makes for a 'good learner' is key. Informal discussions with teachers at Saints College suggest that 'spoon feeding' and a lack of independence are of primary concern, particularly for low attaining FSM boys. One staff member commented on their disappointment with these pupils' loss of motivation as they age and progress through the school system: "It's like they arrive ready and eager and then become entirely reliant on us by the end." Saints College is a 4-19 college, and thus this point was compelling. The initial investigative phase of this research included a series of 'learning walks' in the Primary phase at Saints College. Observation and comparison of practice across the different phases was enlightening. Teachers of Key Stage 1 and Key Stage 2 encouraged pupils to actively reflect on their 'Judgement of Learning' (JOL) through self and peer assessment (Winne, 1995). This skill itself is assessed, graded

[3] Attainment 8 is a point score given to pupils measuring their average attainment across eight GCSE subjects. (DfE, 2018)

and tracked by teachers over the course of the academic year. Pupils in Year 2 are asked to self-assess their writing and identify where they think they have met the success criteria via a tick list. Teachers then check the same piece of work. If their tick list matches the pupils, they can ascertain that the pupil has intentionally included a component and thus assume accuracy in their JOL (see Appendix I). '5 habits of mind' are explicitly taught to pupils across all subject domains; these include curiosity, persistence and focus. These are visually displayed in every classroom and pupils can discuss these even in the Early Years phase. Routines reinforce the importance of learning as a process; pupils understand the difference between drafting, redrafting and editing and this is a routine aspect of learning across all subject domains.

Many of the attributes witnessed were indicative of the 'soft skills' at which, according to Dylan Wlliam, girls at GCSE have greater proficiency. Teachers perceive these younger pupils as better trained at 'self-regulating' their learning than their older counterparts. A changing curriculum which is content heavy is leading to increased debate around knowledge-based instruction or adopting child-centred approach to learning (Gibb, 2017; Bleimain, 2018). When schools are under pressure to transmit more knowledge than ever before, to what extent are secondary school pupils being given the opportunity to develop these 'soft' skills? Metacognition is key to understanding pupils' ability to self-regulate. Metacognition is the process of 'thinking about thinking' (Flavell, 1979). Metacognitive skill is the conscious awareness and monitoring of one's cognition to reach a goal (Flavell, 1979). The pupils observed in the Primary phase externally exhibit these traits. One could argue that these practices are so entrenched in their day-to-day school experience they do so unconsciously. However, these pupils certainly appear motivated to monitor and 'regulate' their learning. For Zimmerman (1995; 2010 pp.66), self-regulating learners are 'guided by personally set goals and task related strategies' they purposefully direct metacognitive skill through a cycle of planning, monitoring and evaluation. These traits are indicative of academic and long-term success in the workforce.

What is the difference between the pupils in the primary phase and the secondary phase? Is it a question of motivation? Pupils in the primary phase are enthused by rewards such as sitting in the 'golden chair' or their picture moving up a rung on 'the ladder of success'. It is difficult to imagine the average 16-year-old being as enthused by these extrinsic rewards. There is some debate in theory about the relationship between metacognition and motivation (Winne, 1995; Zimmerman, 1995). Theorists such as Perry suggest that the personal motivations and affects cannot be separated from cognition (Perry & Rahim, 2011). Perry suggests that more research is required within the classroom and from the perspective of the learners as well as the researchers to fully understand the impact and efficacy of metacognition. Self-efficacy and agency are key to becoming a self-regulated learner – one must be motivated to implement metacognitive strategies. Understanding the disposition of pupils and different motivational theories is key to adopting the best approach to develop metacognition in the classroom (Zimmerman, 1995). Thus, in order to understand the gender gap at Saints College one must begin by understanding the pupils themselves and the relationship between their self-efficacy and self-regulation.

It is worth considering that a pupil may demonstrate self-regulation in one domain but not another. Whilst it would be fruitless to state that one subject is more important than another, it seems fair to recognise that some skills transcend subject areas and are a precursor of general academic success. High levels of literacy bolster academic attainment; low levels of academic attainment narrow post-16 opportunities as most post-16 courses require English Language at a Grade 4 or above. Consequently, improved literacy improves long term outcomes for pupils. High levels of literacy correlate with happiness in later life and long-term employment (National Literacy Trust, 2018). Thus, an effective intervention strategy focusing on improving literacy could have broad ramifications. After consideration of the context of Saints College and beyond, the focus of this intervention became the most vulnerable and marginalised group of pupils - low attaining boys eligible for FSM. If pupils who are successful at school are 'self-regulated learners' who implement metacognitive strategies (Zimmerman, 2010) and interventions which focus on metacognitive

awareness are proven to have a high effect size (Haller et al, 1988; Mason, 2013; Willingham & Lovette 2014; EEF, 2017), then an intervention focused on developing pupils' metacognition when approaching reading and writing could positively impact pupils' academic attainment and longer term pathways.

What then of the question of motivation? Whilst motivation is key to metacognition, metacognition can improve achievement. Motivation theories (Galloway et al, 2004) suggest that making progress and achieving an objective positively impacts pupils' self-efficacy (Weiner, 1974; Zimmerman, 1995). Perhaps if pupils achieve success on a small scale using metacognitive strategies, they will be increasingly motivated to adopt these across the curriculum, thus creating a mutually reinforcing cycle of metacognition, self-regulation and motivation. This has the potential to alter the trajectory of their academic experience across all subjects and beyond. In a changing economic landscape, complex communication and proficiency with technology are increasingly necessary to be a successful member of the workforce (Autor, Levy, Murnane, 2003; Deloitte, 2017) – all of which require self-regulation. Therefore, the ability to regulate internal processes and independently problem solve could improve the employment prospects of marginalised pupils. Considering the moral impetus for closing the gender gap and supporting typically marginalised pupils in tandem with Saints College's male dominated context, this seemed a worthy focus area of research and innovation.

Further reading and research was needed to ascertain:

What is self-regulation and metacognition?

What is the relationship between metacognition and academic attainment?

How does developing metacognition improve attainment in English specifically?

How does this help one to understand the Gender gap?

These questions structure the following review of the literature.

Literature Review

What is metacognition and self-regulated learning?

Metacognition is colloquially defined as 'thinking about thinking'. In 1979 Flavell identified metacognition as a promising new area of investigation, deeming metacognitive experiences as any 'conscious cognitive' experience (Flavell, 1979 pp. 908). Metacognitive knowledge is awareness and understanding of the interaction between person, task and strategy. In the classroom, a learner with metacognitive skill would assess their prior knowledge, the task at hand, and then consciously consider which strategy to employ to reach a desired goal. In the first instance a child may become aware that they do not understand something but a child adept with metacognitive skills might be able to accurately ascribe reasons for their confusion.

Influenced by the writing of Piaget and Vygotsky, Flavell's inquiries were emblematic of a shift from a behaviourist approach to a cognitive approach to learning (Cambridge, 2018). Metacognition is concerned with executive control over internal processes rather than external reactions to stimuli (Haller, Child & Walberg, 1988). Aspects of Vygotsky's social learning theory could now be recognised as developing learners' metacognition; the interaction between the learner and teacher within the Zone of Proximal Development and the gradual transfer of ownership of these processes are synonymous with developing metacognition (Vygotsky, 1978; Cambridge, 2018).

Increased interest in metacognition has led to increased debate around defining and understanding the nature of this 'fuzzy concept' (Jacobs & Paris, 1987 pp.257; Wellman, 1985). Firstly, there is a necessary distinction between cognition and metacognition; cognitive strategies lead to cognitive processes whereas metacognition is the process of *monitoring* these strategies. Perkins (1992) theorised four categories of metacognitive ability: 'Tacit Learners' who remain unaware of their metacognition and do not consciously apply particular strategies; 'Aware Learners' who hold some understanding about different types of thinking but do not actively monitor or plan; 'Strategic Learners' who actively apply an appropriate strategy to problem solve and 'Reflective Learners' who

both strategise and monitor thinking. Both Perkins and Flavell accept the existence of 'tacit' metacognition (Cambridge University, 2018; Perkins, 1992). Likewise, Winne (2011) purports that metacognition can be implicit and unintentional. Jacobs & Paris (1987) rebuke this and define metacognition as knowledge which can be shared between individuals. Whilst metacognition is an internal process, it can be explicitly externalised through discussion or demonstration. Metacognition is reportable; a high attaining learner who demonstrates sophisticated skill but is unable to articulate the process taken does not imply metacognition (Jacobs & Paris, 1987).

The debate extends to how metacognition can be measured or recognised. Through asserting that metacognition is reportable, Jacobs & Paris 'avoid false inferences about the occurrence of metacognition when it cannot be observed or measured' (Jacobs & Paris, 1987 pp. 258). Direct attainment or test performance can be highly correlated with test taking skills or prior intelligence (Jacob & Paris, 1987). As a result, studies heavily rely on interviews to ascertain metacognitive awareness or development. However, when metacognitive awareness is ascribed to children through interview data, several issues arise. Feeling under pressure from the researcher, children may fabricate reasons for their choices, they may lack the verbal faculty to report internal processes and asking questions during or after cognitive processing can disrupt thinking (Garner, 1987; Jacob & Paris, 1987). To avoid these pitfalls, Jacobs & Paris produced the Index of Reading Awareness (IRA). This multiple-choice questionnaire eradicates the need for verbal reports from participants, reduces observer bias, fabricated responses and does not disturb cognitive processes. However, the opportunity for children to guess or randomly choose responses decreases validity and the richness of collected data. Recent research from the EEF suggests that 'trace' tests and classroom observations during which researchers look for observable evidence of metacognition appear more predictive and accurate than discussions before or after a task (EEF, 2018). However, this undoubtably increases the risk of observer bias. It is worth considering a behaviourist perspective on trace testing and observation of external actions as evidence of internal processes; a learner may feel rewarded for

behaviours such as underlining, highlighting or note making and repeat these behaviours. They may not be underpinned by executive control of cognition.

The skills an observer looks for in a trace test of this type are examples of 'self-regulated learning'. The overlap between metacognition and self-regulated learning further complicates this already convoluted concept. For some, metacognition and self-regulation can be used interchangeably. However, Pintrich (2000) defines self-regulated Learning (SRL) as an active constructive process; learners set goals for their learning and then monitor, regulate and control their cognition, motivation and behaviour (Pintrich, 2000). Self-regulation encompasses the necessary monitoring of cognition alongside factors such as motivation and context. Zimmerman's conception of self-regulated Learning (SRL) is widely accepted; it is not enough to possess metacognitive knowledge, self-regulated learning is the action of using metacognitive strategies when confronted with 'fatigue, stressors, or competing attractions' (Zimmerman, 1995 pp. 217). SRL is a social cognitive conception which requires personal agency to regulate metacognitive knowledge and skill. One must be careful to differentiate between behavioural self-monitoring in which the learner can rely on external measures of performance such as the amount read, or questions answered, rather than cognitive monitoring. A self-regulating learner asks themselves, how much have I understood? What prior knowledge have I used here? What do I need to know to understand the next part? Put simply, metacognition is the ability to monitor your cognitive processes, but self-regulated learning is being proactive in your efforts to employ metacognitive strategies to reach a learning goal. If metacognition is 'thinking about thinking', SRL is 'learning to learn'. Zimmerman states that a self-regulating learner is 'aware of their strengths and weaknesses and guided by personally set goals and task related strategies' (Zimmerman, 1995 pp. 66). The process of SRL enhances a learner's self-satisfaction and motivation to continue to improve their methods of learning.

There is a body of research to suggest that older children's metacognitive skills are more advanced than their younger counterparts. However, younger children do develop metacognitive

knowledge and are able to self-regulate and goal set to ascertain their success (EEF, 2018). Whilst, in theory, older children should have higher levels of metacognitive awareness, the distinction between metacognition and SRL is important when one is cognisant that older children may be less motivated to regulate their learning if they do not ascribe importance to academic success. Thus, motivation and perceived agency are important factors to consider.

Winne places cognition at the heart of SRL describing learning as the interplay between knowledge, information and experience. Self-regulation is the process of turning declarative knowledge (what is known) to procedural knowledge (how to use it) (Winne, 1995; 2011). Central to self-regulation is the learner's inspection of their cognitive functions and then a learner's control of these. Winne (2011, pp. 18) states that self-regulation is natural, and learners do it whether taught about it or not. Often it remains implicit and 'runs by itself' in which case learners may be self-regulating with little metacognitive awareness. However, as one's capacity for cognition is limited, this natural or implicit regulation can lead to error. Learners trained to introspect accurately are less likely to suffer error and bias. According to Winne (2011), procedural knowledge transcends academic subjects to include social interaction, motivations and anxiety. Winne (Efklides, 2011; Winne, 2004) offers the COPES model of Self-Regulated Learning. Cognitive conditions (inclusive of motivation, knowledge and beliefs) help to inform the learner's operations which lead to a product that is then cognitively and externally evaluated. Each factor of the model is mutually influential (Winne, 1995; 2004; 2011).

However, Zimmerman (1995) rebukes Winne's conception of SRL stating that it assumes learners are highly rational and that learning is intrinsically valued. In fact, the relationship between self-regulation and motivation is more complicated. It is too reductionist to recognise motivation as knowledge the learner must control and monitor. Metacognition takes place within a larger system of social environmental, behavioural and subjective factors (Zimmerman, 2010). Self-regulatory skills do not develop in a vacuum (Bussey, 2001). Zimmerman's cyclic model (Efklides, 2011; Zimmerman

1998) places motivation more prominently; Zimmerman describes Forethought, Performance and Self Reflection. Self-efficacy is prominent in the Forethought phase, but affects agency, motivation and SRL throughout. Zimmerman's framework is largely adopted and underpins much educational discourse on SRL with the model represented as a cycle of planning, monitoring and evaluation (Zimmerman 2010; EEF, 2018).

What is the relationship between metacognition and academic attainment?

Personal agency and self-efficacy are key indicators of academic success. Arguably there is a dichotomy at play between a pupil's ability to self-regulate and their willingness to do so. For example, a child may be able to self-regulate learning but unwilling to due to a lack of motivation. Or alternatively, could the same child be unable to self-regulate which reinforces poor outcomes and therefore lowers motivation? How can a researcher ascertain which is the prevailing factor? A complex relationship exists between motivation, self-regulatory behaviours and metacognition. Zimmerman and Winne's respective models demonstrate the nature of SRL; it is a concept underpinned by social cognitive theory, namely Bandura's conception of perceived self-efficacy. Bandura's (1977) seminal article '*Self-efficacy: toward a unifying theory of behavioural change'* Bandura proposes self-efficacy bridges the gap between cognitive processes and behavioural outputs. Bandura demonstrates that, when confronted with unfamiliar threats, 'perceived self-efficacy' is a bigger indicator for future success compared to experience (Bandura, 1977 pp. 139). Self-efficacy is the belief one holds about their ability to reach a certain outcome, their personal agency in instigating progress or change. It is operationalised as confidence in reaching an outcome and therefore has significant motivational power (Efklides, 2011). A strong belief in your self-efficacy will bring about increased effort and persistence to reach a goal. A person's self-efficacy is informed by a range of factors such as previous 'mastery experiences', social feedback and pressure (Bandura, 1977 pp. 143). It seems clear that SRL requires researchers to consider learners in context – Perry & Rahim (2011)

state that too often has research studied metacognition distinct to context when in fact, learners' choices are inextricably linked and embedded in their social milieu.

The connection between self-regulation and self-efficacy widens discourse to conflicting perspectives on learners' motivation. Early research in the 1940s and 1950s focused on external behaviour as an indicator of motivation. 'Drive' theory suggests that learners' motivation is instinctive and alters in response to external stimuli. Teachers can direct a learners' energy but they do not affect it (Galloway et al, 2004). In the same way, Skinner's Behaviourism suggested through appropriate reward motivation would increase. Other perspectives include Atkinson's Achievement motivation (1964) and Wiener's Attribution theory (1979). Both suggest that our motivation is affected by our desire to achieve success with the former suggesting this is instinctive and an aspect of personality but the latter purporting our previous experiences and attributions of success and failure drive us above 'personality'. Weiner's Attribution theory established the foundation for research on learners' Mastery Orientation, Self-Worth motivation and Learned Helplessness (Galloway et al, 2014; Seligman, 1975). All of which suggest that learners' sense of previous success and fear of failure drive choices. When applied to education, each approach assumes that academic success is valued – it is worth considering that for some pupils their self-worth may not be wedded to academic success but conflicting cultural or social values. Aside from the early examples of motivation theory, all reinforce the role of self-efficacy. Pupils who believe their ability is fixed or have had negative experiences of their agency may appear less motivated because of a lack of perceived self-efficacy.

Despite the varying perspectives on motivation, the literature demonstrates a shared consensus; high levels of self-efficacy and self-regulated learning are significant predictors of academic performance and bolster academic success (Abu Hilal & Al Khati, 2011). Arguably, this returns discourse to a causality dilemma. Does self-regulation improve pupils' self-efficacy or does self-efficacy lead to self-regulation? According to Zimmerman this is a mutually reinforcing cycle. Self-

regulation enhances self-satisfaction and motivation to continue to improve approaches to learning (Zimmerman, 2010). Pupils require positive belief about their personal agency to self-regulate but self-regulation will reaffirm pupils' capability for change which is inherently motivating.

Various research confirms the positive impact of SRL and metacognitive awareness on academic attainment. Much of the data looks at the impact in English and mathematics. In a meta-analysis and review of school wide programmes, the EEF found that explicitly teaching metacognitive skills and supporting self-regulated learning allowed pupils to make as much as 7 months catch up progress (EEF, 2018). SRL improves pupil accuracy and academic performance across all domains. Beyond their academic career, self-regulated learners adept at applying metacognitive strategies will be better equipped for a changing economic landscape. Today's average worker will have 10 jobs before 40 compared to two or three jobs in a lifetime in the 20th century (US Department of Labor, 2008) – arguably, SRL equips pupils to be lifelong learners.

According to EEF guidance (2018), teachers can facilitate SRL in a variety of ways. Firstly, through the explicit teaching of metacognitive strategies including how to plan, monitor and evaluate learning. Teachers should set a level of challenge which requires pupils to self-regulate; a level of deliberate difficulty is necessary which requires pupils to draw on metacognitive strategies - much like Vygotsky's Zone of Proximal Development (Vygotsky, 1978; 1986). Perry & Rahim (2011) describe the importance of co-regulation and shared regulation. Teachers and peers provide opportunities for the learner to practise application of adaptive strategies through external modelling, feedback and shared problem solving. This scaffolding is gradually reduced until the learner has internalised the SRL process and can self-regulate independently. Perry & Rahim (2011) state that learners are likely to engage in SRL when they are given autonomy over the learning process through choice of who to work with and when, and involved in establishing a shared success criteria. Teachers often report on pupils' inability to self-assess or peer assess – both require high levels of self-regulation (Panadero et al, 2018). By involving pupils in goal setting and externalising the learning process, learners will

become better equipped to make informed judgements about their work and the work of others. For Winne (1995) this is a leaners' Judgement of Learning; increased accuracy in this area suggests increased metacognition and SRL. These practices should be adopted through a cross curricular approach where pupils are encouraged to organise and manage their learning independently.

Alexander's (2017) 'Dialogic teaching' also improves metacognitive ability and encourages SRL. Dialogic teaching emphasises classroom dialogue. Pupils are encouraged to debate, discuss and reason. Talk should be collective, reciprocal and cumulative with ideas developed and 'chained into particular ways of thinking and enquiring' (Alexander, 2017 pp.38). Talk scaffolds and enables the process of learning (Bruner, 1978). Language should be used as a 'tool to stimulate a variety of highly complex internal processes in children's thinking' (Thompson, 2013 p.88). A teacher can raise metacognitive awareness by sharing aloud their internal dialogue and by making their metacognition explicit. The positive impact of a dialogic approach to learning is well documented (Alexander, 2017; Thompson, 2013; Mercer, 2008).

Despite the growing popularity of SRL in classrooms, theory suggests a level of caution is necessary. One must take care to avoid creating 'false hierarchies', metacognition is not a 'higher order skill' (EEF, 2018 pp. 17). Understanding key concepts is fundamental to analysis and evaluation. These skills should not be pitted against one another. In other words, metacognition is a means to an end not a goal in itself (Zimmerman, 1995). It is unhelpful for learners to be caught up in their thinking and endlessly ruminate (Efklides, 2011). Claxton (2009) uses the analogy of sand, water and cement to demonstrate the foundations of education. Sand is the cognitive element, cement is the shared vision and the water is theory and research. For Claxton, all three are required for learners to 'learn to learn'. Over emphasis on one component can be detrimental. 'Thinking too hard' can detract from the learning goal. A learner focusing on one 'sayable' strategy might miss out on the easily perceived intricate or unexpected details or patterns in experience and thinking aloud can interfere with

problem solving. Teachers have a responsibility to ensure pupils know when to 'think hard' and 'when to pay wordless attention' (Claxton, 2009 pp. 181).

Thus, it can be expected that a significant amount of skill is required to facilitate and support metacognition and SRL in classrooms. As much guidance suggests that this should be delivered cohesively and through a cross curricular approach, what are the implications for instruction in individual subject domains?

How can developing metacognition improve performance in English?

Historically English has been divided into reading, writing and oracy. A review of the literature evidences that SRL supports the acquisition of each of these key skills. As Britton (1969, pp. 29) states, 'Reading and writing float on a sea of talk' and therefore it can be reasonably accepted that increased proficiency in each of these areas increases proficiency overall.

Baker & Brown (1984) present a review of the role of metacognition in reading and state that cognitive monitoring is required for effective reading. Brown refers to this as 'debugging' devices (Brown, 1980; Wilson, 1985). According to Baker & Brown, metacognitive strategies ensure that the reader can clarify the purpose of reading (both implicit and explicit), identify areas of significance, monitor ongoing activities to determine comprehension, engage in self-questioning and change or adapt a strategy in the face of failure (Wilson, 1985; Brown, 1980; Baker & Brown, 1984; Willingham & Lovette, 2014; Mason, 2013). In practice, teachers encourage pupils to engage in self-talk, share their own strategies and encourage learners to evaluate the extent of their learning (Wilson, 1985).

Jacobs & Paris (1987) state that metacognition is an important component of reading instruction in that it emphasises 'active participation' on the part of the learner. Learners plan to read, monitor and evaluate their reading. Planning activities include activation of prior knowledge and reading with a purpose. Monitoring activities include rereading, self-questioning and skimming or scanning. Evaluation activities include summarising and paraphrasing. Willingham & Lovette (2014)

purport that direct instruction of these skills gives pupils an undeniable advantage over their peers, provided pupils are given the contextual framework of a text. In order to capture progress, Jacobs & Paris' (1987) introduced the Index of Reading Awareness, a multiple-choice questionnaire measuring learners' metacognitive awareness when reading. However, as discussed earlier, measurement of metacognition and self-regulation is notoriously difficult. Whilst the IRA accounts for learners' struggle to articulate their learning processes, the reductive nature of a multiple-choice questionnaire provides less information for a researcher.

Research shows learners make significant gains when metacognitive reading strategies are explicitly taught. In Chiu's metanalysis of 43 studies involving pupils of primary and secondary school age, the average effect size of metacognitive instruction to support reading was 0.67 – a substantial gain (Chiu, 1998). Haller, Child & Wahlberg (1988) found that whilst the effect size of metacognitive intervention is substantial, some strategies are more effective than others with self-questioning and encouraging backward-forward skimming and scanning proven to be most effective. Likewise, a recent study by Mason (2013) applied a three-fold approach to reading encouraging pupils to complete a series of activities stimulating thinking before, during and after reading. Encouraging metacognition in this way positively improved reading comprehension scores on a pre and post-test and bolstered pupils' subsequent approach to writing.

A dialogic approach to teaching also demonstrates significant gains in learner's reading and writing proficiency. This approach encourages pupils to develop a metalanguage (Olson 1991; Skidmore, 2000; Skidmore et al, 2003) which makes written texts available as an object of reflection. Mercer's (2008) review 'Talk and the Development of Reasoning' reveals that teacher-led talk in which collaborative reasoning takes place leads to improvements in reading comprehension and the quality of written arguments. Mercer's (1995, 2008) conception of 'Exploratory talk' where questions are authentic, ideas are 'chained' to build on what has gone before and ideas are respectfully challenged, is key to making the learning process explicit. A learner's internalisation of this process

allows them to self-question and engage in a 'silent, rational dialogue' (pp. 98). All of which are key components of metacognitive knowledge and improve a learner's ability to read critically.

Graham & Harris (2000) also demonstrate the positive effect metacognition has on writing development. As with reading, writing is an intentional activity which must be self-planned and sustained (Zimmerman, 1995; Zimmerman; 2010). Effective writing requires a level of introspection; writers must be aware of their purpose and craft and shape their writing to achieve a pre-determined goal. Various self-regulation strategies have been recognised as improving writing. For example: goal setting, note taking, organisation of notes, visualisation of characters, self-verbalising, time planning and environmental structuring such as finding a quiet place to write and seeking assistance from others (Graham & Harris, 2000). Explicit teaching of these skills as part of the writing process has had demonstratable success; De La Paz (1999) reported that the writing performance of good, average and struggling writers all improved after a short 4-week intervention (Graham & Harris, 2000). Further illuminating are findings which suggest that a writer's self-efficacy is improved by employing a range of self-regulatory behaviours reiterating the theory that increased self-efficacy and increased self-regulation are mutually reinforcing and beneficial.

Whilst the gains made when metacognition and SRL strategies are applied to reading, writing and talk are impressive, how this is facilitated requires careful consideration. As outlined by Claxton (2009) and Efklides (2011), needlessly ruminating and overthinking are unhelpful. Research demonstrates that, whilst the approach should be cross curricular and uniformly adopted, metacognition and SRL has little impact when taught independently to content and packaged as thinking skills. Whilst learners should be made aware of the transferability of these skills, this develops with increased metacognitive knowledge or skill. The strategies necessary in one subject domain will differ to another. Learners should be aware of the importance of SRL across all subjects but strategies themselves are not universal (EEF, 2008). Harris, Graham & Troia (2000) and Mason (2013) propose a model which ensures that SRL strategy development is purposeful. First teachers

must develop pupils' background knowledge such as providing examples of effective writing and activating prior knowledge. Teachers and pupils then collaborate to examine current writing performance and address negative self-beliefs. A teacher then models the strategy which is subsequently memorised through a mnemonic or paraphrasing. Practice should initially be collaborative, but teacher input should then fade to allow for independent practice.

It can readily be concluded that metacognition and SRL has a positive impact on pupils' skills in English but what about academic attainment and exam success? The focus primarily on the learner's internal processes is somewhat controversial. Against the backdrop of 2017 education reform, some argue that these skills and strategies do not allow for the depth of knowledge acquisition required for academic success. Current Minister for School Standards Nick Gibb's speech (2017), 'The evidence in favour of teacher led instruction', implores teaching practice to move away from in-class discussion and instead purports that a teacher-led, knowledge-based curriculum would increase rigor and learning. According to Gibb, creativity and problem solving do not transcend knowledge (Gibb, 2017). As discussed in my Part 2 assignment 'Oracy and School X: Does our classroom talk improve outcomes for Pupil Premium eligible pupils?' pedagogical practices in some schools have adapted in line with Gibb's view. The motto of Michaela Community School in North London is, 'Knowledge is Power'. Teacher Olivia Dyer (2016) states, "Prior to joining Michaela, I was a progressively minded teacher". She describes her changing approach and now favours teacher-centred learning, calling for teachers to 'Just tell them' (Dyer, 2016). The school were graded outstanding in a recent Ofsted inspection (Ofsted, 2017).

However, child-centred pedagogy remains at the forefront in another Ofsted rated Outstanding school (Ofsted, 2014). School 21 in East London emphasises the important of a dialogic approach to learning across the curriculum and deems this a 'moral cause' (School 21, 2018). School 21 emphasises the need to prepare pupils for life post education – learning to learn beyond the parameter of a prescriptive curriculum. Barbara Bleiman (2018, n.p.) from the English and Media

Centre describes the conflict between knowledge-based instruction and child-centred approaches as a 'false dichotomy.' Child-centred pedagogies can go hand in hand with knowledge transmission. Whilst knowledge is important, externalising metacognitive reasoning is key to application of this knowledge. This parallels Winne's distinction between declarative knowledge and procedural knowledge; it is not enough to know *what*, we need to know *when* and *how* to apply knowledge (Winne, 1995) – integral to SRL and arguably a lifelong skill.

How does this help us to understand the gender gap in UK Schools?

Aside from discussion of age, research on SLR and metacognition tends to view learners as a homogenous group. However, if SRL is both an indicator of and contributor to academic attainment perhaps it can help to account for the existing 'gender gap'. In 2018, media coverage reported this gap was narrowing with some suggesting this was the result of educational reform reducing coursework and increasing terminal exams (Adams & Barr, 2018). Whilst the gap has narrowed slightly, a 6 percentage-point difference still exists between boys and girls achieving a Grade 7 or higher at GCSE. Girls outperform boys in every subject except maths and physics (Adams & Barr, 2018). The gap is significant in English. In 2018 71% of girls achieved a Grade 4 (pass) or above compared to only 62% of boys (Ofqual, 2018). This gap appears early; in 2016, 57% of girls met the expected standard in reading, writing and maths at the end of KS2 compared to only 50% of boys (Parliament, 2018). This is congruent to research; Jacobs & Paris (1987) found that girls scored higher on the IRA and international research consistently demonstrates that boys' attainment is lower in both reading and writing. A PISA study (Programme for International Pupil Assessment, 2015) of 44 countries in the OECD (Organisation for Economic Co-operation and Development) revealed that, in all but one country, boys' reading was behind girls. Research demonstrates that strong reading skills heavily correlate with academic attainment across all subjects (Sullivan, 2013) - it is of little wonder the gap is prevalent across all domains.

As discussed earlier, there seems to be a ‘folk pedagogical belief’ (Bruner, 1999 pp.5) that girls are better at learning than boys - but does this have an empirical basis? Arguably, boys’ behaviour is deemed less conducive to academic success and this is regularly reinforced in the media. Articles such as ‘Boys should be treated more like girls’ (Espinoza, 2016) and ‘The UKs University Gender Gap is a national scandal’ (Weale, 2016) report a difference in aspiration and expectations of boys and girls. Both research and statistics suggests that boys are less able to regulate their behaviour and learning. Boys are more likely than girls to disrupt learning (PISA, 2015; Matthews et al., 2009) and boys were more than three times more likely to be permanently excluded from UK schools in 2017. Professor Dylan William (Curtis, 2009) states that there is firm evidence that girls do better in coursework, "Girls' coursework marks tend to be higher than boys so removing coursework will disadvantage girls. The so-called 'soft' skills like planning your work, sticking to deadlines, conscientiousness, are important for coursework…to take advantage of that you have to be organised." Interestingly, the ‘soft skills’ William describes here could be understood to be qualities of SRL.

Overall, it seems clear that a gap exists not only in terms of attainment but also society’s perception of male and female learners. The roots of this perception are unclear. There is little to no research which can conclusively ascertain any neurological differences between boys and girls (Logan & Johnston, 2010; Wallentin, 2009). As infants, evidence does suggest that girls have superior verbal abilities but there is little evidence that boys start school less equipped with the skills for learning to read (Logan & Johnston, 2010). There is some evidence that boys rely more heavily on a rules-based approach to reading; Baron Cohen (2002) suggests that males are a more naturally drawn to rule governed systems. Likewise, boys have been deemed more likely to use phonological information than girls; therefore, a synthetic approach to teaching reading has been found to be more successful with boys. An analysis of gender differences in early writing suggested that boys are less likely to engage in inner speech which is necessary to ‘control, direct and support the production of the linguistic form of the text’ (Adams & Simmons, 2018. p6). Inner speech requires oral language skills,

specifically vocabulary knowledge – girls' superiority in this area has been identified (Adams & Simmons, 2018). However, Reynolds et al's (2008) analysis of spelling and writing across childhood attempted to control variables such as visual processing, intelligence and fluid reasoning and found that girls still outperformed boys; one proposed reason for this discrepancy was that self-regulation strategies accounted for girls' dominance.

It seems somewhat clear that whilst cognitive differences between boys and girls are negligible, external behaviour and motivation differ. Boys are typically less positive about reading and less likely to read for pleasure (Logan & Johnson, 2010). Research suggests that girls are more likely to rely on reading strategies and better apply the most appropriate strategy when encountering difficulty (Bouchamma et al, 2014). The reader must be engaged and attentive for reading instruction to be effective; boys are reported as being less attentive in literacy lessons (Logan & Johnston, 2010). Similarly, a PISA review suggested that girls are recognised by teachers as exerting more effort (PISA, 2015). Wachs et al (2004) also found that boys are more affected by external factors such as a disorganised or chaotic classroom. This reduces their capacity for self-regulation. Research suggests that girls are more likely to have a 'mastery orientation' and be driven by self-worth motivation and intrinsic factors whereas boys are more likely to responds to extrinsic rewards (Bussey 2011; Abu Hilal & Al Khati, 2011). PISA suggested the latter is the case for boys; they struggle to delay gratification and in turn are less able to self-regulate (PISA, 2015). Learners with intrinsic motivation who are mastery orientated reflect on learning and find satisfaction when making improvements. However extrinsic motivations, such as a performance goals or competition, can lead leaners to be more concerned with peer performance, praise and punishment. Abu Hilal & Al Khati (2011) study focused on Arab states and suggested that the pressure for boys to succeed academically leads boys to focus on competition and comparative performance whereas girls have more scope to focus on learning. Whilst culturally the UK differs, it seems fair to assume that cultural, social and environmental factors inhibit boys' learning and self-regulatory behaviours.

There is some debate around the extent that teacher perceptions reinforce these stereotypes. Some research suggests that, whilst girls are expected to be quiet and studious (Berekashvili, 2012), teachers expect poor behaviour and low attainment from boys which perpetuates the gender gap. A further explanation is the different way in which boys and girls are socialised. Martin and Ruble (2004) describe children as 'gender detectives' who conform according to 'gender cues' from society (pp.67). This view suggests a definition of gender as distinct to sex and biological differences, and as a constructivist concept influenced by social and cultural values. If it is widely reported that girls are better readers and boys are better mathematicians, then it is of little wonder that this view is self-perpetuating. One could argue the aforementioned PISA study (2015) suggests that the gap transcends social or cultural perceptions as different cultures conception of gender roles differs. However, the lack of Middle Eastern or African countries represented in the dataset makes such a conclusion invalid. Bussey (2011) suggests the gap is a result of three effects: personal, environmental and behavioural. Gender stereotyping of subjects is common with maths and science typically viewed as 'boy' subjects and English as a 'girl' subject. This extends to efficacy with boys recognised by society as 'better at maths'. These external valuations impact learners' self-efficacy which is irrevocably interlinked to learners' self-regulation. Pupils are exposed to roles and occupations which are 'highly organised by gender' (Bussey, 2011 pp. 432). The range of 'non-traditional models' for boys is restricted. Likewise, parental influence can reaffirm society's gender stereotyping; Tenenbaum & Leaper (2003) found that when fathers instructed their children about a physical science task, they used more scientific terms when they communicated with their sons than with their daughters. Peer groups reinforce this with boys more likely to engage in play involving construction, maths, science and sports compared to girls who are more likely to play with objects linked to domestic care giving (Bussey, 2011). This differing socialisation pervades pupils' academic career; research suggest that girls are more likely to engage in literacy activities during free time at kindergarten whereas boys are more likely to engage with science-based activities (Adams & Simmons, 2018). As pupils age, boys receive more attention – both positive and negative – from

teachers (Bussey, 2011). Overall, it appears that boys are more likely to engage with their external environment, through interaction with others, differing habits of play and active behaviour. Perhaps girls, who are socialised to be quieter and independent, are better equipped for the introspection necessary for self-regulated learning and metacognition.

Both an analysis of the gender gap and attempts to break research on SRL away from a homogenous and androgynous group remain fundamentally reductionist. It is not enough to understand the gender gap as a difference between boys and girls; research must consider *which* boys and *which* girls. In the last decade the lowest attaining learners have regularly been white, working-class boys. Over the last decade, British, white working-class boys have consistently achieved the lowest number of GCSEs than any other ethnic group (Dfe, 2017). 'Disadvantaged' children from other ethnic minority backgrounds achieve significantly better than their peers from White British backgrounds at school. Results of pupils from these backgrounds have improved by more than 20 percentage points since 2006 (Kirby & Cullinane, 2016). In a parliamentary debate, Mary Curnock Cook, UCAS' Chief Executive stated: "Girls are doing better throughout primary, secondary and higher education than boys; poor, white boys are the most disadvantaged group in entry to higher education and the gap is getting bigger" (Parliament, 2016 pp.10).

Generally, 'disadvantage' and being a white, working-class boy preface poor outcomes in education and beyond. The role of 'disadvantage' and 'ethnicity' is a multifaceted issue. Research suggests that disadvantaged ethnic minority children typically experience a greater degree of parental engagement with their education than disadvantaged White British children do (Kirby & Cullinane, 2016), but what other factors are at play? Discourse on class and Cultural Capital (Bourdieu, 1997) is difficult for many reasons. Firstly, as Ghaill (1996) states, literature often reinforces the 'otherness' of the working-class and presents a deficit theory of working-class culture in education. Secondly 'oppressions' cannot be just be 'added together' (pp. 297). Working-class individuals are also not a homogenous group and to over generalise reinforces stereotypes. Ghaill concludes that 'English

schools are categorised by a collective unconscious knowledge whereby teachers spurn, ignore and trivialise working-class pupil cultures' (pp. 305). However, despite the difficulties in understanding the relationship between race, class and education, if schools have any hope of closing the gender gap it seems necessary to adopt a pragmatic approach and consider a range of theory and research.

One such theory is that pupils from disadvantaged backgrounds, including white working-class boys are less 'enculturated into schooling than some of their peers in disadvantaged areas' (Harris & Williams, 2012 pp. 377). Influenced by Bourdieu's Cultural Capital and Mercer's research into effective classroom talk, Harris & Williams collected data on the wait time of teachers, the effectiveness of open questions and reciprocation from the pupils. They concluded that the difference between the most affluent and the least affluent classes in the sample was two years (Harris & Williams, pp. 381). Similarly, Hart & Risley (1996) found that in the USA children from families with professional backgrounds have nearly twice as many words addressed to them as children receiving government welfare by the age of 4. If increased vocabulary is precursor to inner speech which in turn improves pupils' reading and writing ability (Adams & Simmons, 2018), this research suggests that from an early age, pupils from disadvantaged backgrounds are facing exclusion from academic discourse.

But what of disadvantaged white working-class boys in particular? The link between social class and attainment is further explored through discussions of social capital (Bourdieu, 1997) and educational capital (Basit, 2013). Middle class children obtain cultural capital through observation and everyday practice. Basit considered the implications of educational capital (education as a catalyst for success) through different generations of ethnic minorities and found that an awareness of education capital permeated family interactions – the value of education was acknowledged and a driving force motivating pupils (Basit, 2013). One could argue that the inverse would also hold true, a lack of educational capital would also be reinforced from generation to generation.

Common trends emerge in literature concerned with the relationship between working-class boys and school. Skelton et al (2009) discuss perceived 'laddish behaviour' as detrimental to education. Bussey (2011) suggests that a lack of engagement and attainment is because education is seen as the antithesis of masculinity. According to McDowell (2000), the roots of 'laddish' and 'macho' behaviour can be traced to the historic job roles of working-class communities with white working-class men typically working in physically demanding jobs with other men of the same class. These industries are in decline and the 'macho' behaviour cultivated by these workplaces now actively disadvantages men in the current work force. Likewise, male socialisation, such as the types of play and gender cues in schools and wider society continue to emphasise traditional male ways of doing things, which in turn excludes boys from the labour market (McDowell, 2000). This perspective has been criticised by Ingram (2009) who argues that such theory continues to conceptualise 'working-classness' as a 'hurdle' that needs to be overcome with little to no attributed value. However, setting aside any deficit theory, it does seem fair to argue that identity, including that of the working-class, is formed through shared knowledge, habits and traditions passed down from generation to generation.

This theory is explored in Bourdieu's seminal research on 'habitus'; Bourdieu (1986; 1997) considered the impact of our cultural capital on our habits of mind, choices and dispositions. Stahl (2012 pp. 2) defines Habitus as 'an engrained blend of individual history and collective history which orient individuals to their social world'. When habitus and field (i.e. school) do not accord, a disjuncture occurs (Stahl, 2012; Reay, 2004). Learners are pulled in competing directions. As with all learners, working-class boys' 'self-identification' affects their behaviour and motivation. As well as the desire to protect their self-worth, they also have a desire to protect their social worth and avoid a duality of self (Ingram 2009; Stahl, 2012) in which they face exclusion from both habitus and field. Again, this research has implications for the study and development of SRL. If it holds true that education represents 'working-classness' as a deficit, this may negatively impact on a learner's self-belief and self-efficacy – both of which are central to SRL, metacognition and thus indicative of academic success. Similarly, if working-class boys are disengaged from education to avoid a duality of

self and to protect self-worth, explicitly teaching self-regulation and metacognition may be a method to empower and improve self-efficacy. It seems clear that improved self-efficacy and self-regulation will be mutually beneficial. Of course, underpinning this theory is the assumption that educational attainment has value. Educational attainment is highly correlated with earning and future happiness. Arguably, SRL transcends success in examinations and ensures that pupils are prepared for a job market which requires lifelong learners.

In summary, a review of the literature demonstrates that metacognitive awareness is key to encouraging SRL. SRL and metacognition go hand in hand with academic success. There is a gender attainment gap in UK schools and this of concern for Saints College. For a variety of reasons, boys from working-class backgrounds are at risk of falling through the gap; self-efficacy being one. SRL and self-efficacy are inherently linked; arguably, improved proficiency with SRL will improve self-efficacy and vice versa. SRL has a high effect size as a reading intervention approach. Limited research suggests that SRL is an area for development for boys. Therefore, one can hypothesise that improving metacognition when reading will improve self-efficacy and thus self-regulation in English and other academic domains. This could have the potential to improve academic and long-term outcomes for disengaged and disadvantaged learners.

Therefore, literature has shaped the following research questions:

1. What is the perception of lower attaining, FSM eligible boys at Saints College of their self-efficacy?

2. Does an intervention focused on developing metacognitive strategies for reading have a positive impact on low attaining, FSM eligible boys' self-regulation?

3. Is there a difference between boys' application of metacognitive strategies compared to girls receiving the same intervention?

Methodology

This investigation was practitioner research rather than action research as it did not follow a traditional spiral of experimentation, reflection and reapplication. Like action research, practitioner research is grounded in the researcher's specific context. The rationale for following a practitioner research model was largely practical; typically, practitioner research involves one cycle of intervention (Thompson, 2007). Participants in this study were due to sit terminal GCSE exams, the planned intervention was a six-week course and thus time would have been a barrier to reapplication.

The first research question (*What is the perception of lower attaining, FSM eligible boys at Saints College of their self-efficacy?)* was an inquiry into pre-existing circumstances whereas the second and third research questions involved an intervention and subsequent evaluation. Arguably, no broad generalisations could be made from the findings due to the small scale of participants; only 17 pupils were involved. However, I aimed for 'catalytic validity' (Cohen et all 2011 pp. 187; Lather 1991): I hoped my research would provide an impetus of change to improve outcomes for boys from traditionally marginalised backgrounds at Saints College and beyond. I adopted a pragmatic approach and mixed methods methodology as I accepted that there would be multiple possible interpretations of the data set and acknowledged inherent subjectivity (Armitage 2007; Creswell, 2003). A pragmatic approach enabled me to ensure that my methods directly addressed my research questions instead of entering an epistemological debate. Whilst I would be unable to concretely purport findings on the relationship between gender and metacognition, my methods would allow conclusions on the impact of the intervention on the two specific groups of pupils identified. As Kinchelow & Mclaren (1994) suggest, my goal was to 'better understanding my world in order to transform it' (Cohen et al, 2003 pp.187).

My readings on SRL and metacognition, alongside to my knowledge of the context of Saints College, led me to hypothesise the following:

1. Lower attaining FSM eligible boys at Saints College would have a *negative* perception of their self-efficacy.
2. An intervention focusing on improving metacognitive strategies for reading *would* have a *positive impact* on FSM eligible boys' ability to self-regulate.
3. There *would be a positive difference* in the impact of the same intervention given to girls but that this would not be statistically significant.

The first hypothesis was formed from anecdotal and statistical evidence gathered in my day-to-day role at Saints College. As discussed previously, this group of pupils have a lower 'behaviour for learning' score than their peers and teachers report on their lack self-efficacy. The second hypothesis stemmed from literature suggesting that metacognitive interventions have a high effect size (Haller et al, 1988; EEF, 2018). Finally, the third hypothesis arose from the convoluted discourse around gender and SRL– whilst it seems fair to conclude there is little biological difference (Wallentin, 2009), educational institutions promote girls' superiority in this area (Curtis, 2009; Moreton 2013; PISA, 2015). Thus, I assumed that, whilst girls might receive and react to the intervention differently due to social norms, the actual impact on their cognition would be much the same as their male peers.

Which pupils?

Improving learning outcomes for boys is an area of priority nationally but is of particular importance for Saints College. As explored in the Literature Review, certain curriculum areas demonstrate a wide attainment gap; boys consistently perform less well than girls in English Language (TES, 2017). Historically, boys who are deemed to be 'disadvantaged' achieve far less than their female counterparts (DfE, 2018). Whilst acknowledging it is a crude measure, I began by ascertaining which Year 11 boys were Free School Meal and Pupil Premium eligible at Saints College. Next, I pinpointed priority pupils by triangulating this information with behaviour for learning scores and the gap between current grades and target grades. A group of nine boys were selected. They became the focus of my first two research questions and provided the comparative data for the third.

To address the third research question (*Is there a difference between boys' application of metacognitive strategies compared to girls receiving the same intervention?)* I planned to compare results from a group of girls selected in the same way. My intention was to mitigate confounding variables and ensure comparability. However, as discussed in the introduction, there are far fewer girls in Year 11 at Saints College than boys. Thus, only four of the girls were FSM eligible - the remainder were pupils with low behaviour for learning scores working below their target grade. These differing demographics inevitably reduced the reliability of my research. However, the focus of the research was to ascertain the difference in application of metacognitive strategies specifically between the boys' group and girls' group. As I was not aiming to make broad generalisations about the relationship between gender, class and metacognition, I felt my participant samples remained fit for purpose.

Methods

i. Research Question One (What is the perception of lower attaining, FSM eligible boys at Saints College of their self-efficacy?)

Questionnaire

I used a quantitative methodology to address my first research question for two reasons. Firstly, Bandura's (1977) research and use of questionnaires are a tried and tested method to measure self-efficacy. Therefore, I adapted a questionnaire informed by Bandura's research to allow comparability to past and future research (Muris, 2001). The Likert rating scale allowed for both a flexible response and allowed me to determine some frequencies and correlation (Cohen et al, 2011 pp. 386). Secondly, I was known to my participants and thus I was cognisant of the personal nature of some of the questions and the effect this might have on both their willingness to answer and the veracity of their responses. The questionnaire allowed anonymity. However, I acknowledged that this method narrowed the dataset and reduced the complexity of their self-efficacy to a numerical score –

I would have no way of knowing if the pupil wished to explain their reasons. To counter this, I added an optional 'comments' section (see Appendix II). Likewise, I was concerned that with a five-point scale some pupils would 'sit on the fence' (Cohen et al, 2011 pp. 389). I removed a midpoint option but was aware that this further limited the reliability of the data; to some extent, I was forcing a response of which I could not be sure was accurate.

Peter Muris' (2001) Self-efficacy Questionnaire for Youths considered how Bandura's work could be used to ascertain academic self-efficacy. I adapted this questionnaire focusing on Muris' eight Academic Self Efficacy questions. I made several changes to the questionnaire (see Appendix II). Firstly, Muris' original questionnaire asks pupils to rank on a 5-point scale from 'not at all' to 'very well'. Conscious of my dual role as a research and teacher (BERA, 2018 pp13), I wanted to avoid participants feeling that 'very well' was correct. Theory (Stahl,2012; Ingram, 2009) suggested that, when habitus and field are in conflict, pupils have a desire to protect their self-worth and avoid a 'duality of self'. Asserting that you do something 'very well' asks for a personal assessment of ability. I changed this to a four-point scale ranging from 'Strongly agree' to 'Strongly disagree' which I believed better allowed pupils to externalise their answers and avoid both response bias and any damage to their self-worth. I added two additional questions that were better suited to my line of inquiry. Literature suggested that a sign of SRL was an accurate judgement of learning (Winne, 1995). Similarly, Zimmerman (1995; 2010) suggested that reflecting and making improvements through editing work was a sign of SRL. Questions 7 and 9 are reflective of these ideas; I believed that positive responses would be indicative of SRL and thus positive academic self-efficacy. Finally, Muris' (2001) scale also includes questions which ascertain social self-efficacy. As demonstrated in the literature review, social norms and behaviour are inevitably tied to academic performance (PISA, 2015; Bussey, 2001, Wachs et al, 2005) and thus I added Question 10 (*I can express my thoughts and feelings successfully when other people disagree with me*) to widen the dataset and allow for discussion on the relationship between peer interaction and self-efficacy.

ii. Research Questions Two and Three (Does an intervention focused on developing metacognitive strategies for reading have a positive impact on low attaining, FSM eligible boys' self-regulation and self-efficacy; Is there a difference between boys' application of metacognitive strategies compared to girls receiving the same intervention?)

The Intervention

Research questions one and two were addressed in collaboration with several colleagues. Firstly, I designed an intervention strategy focusing on using metacognitive strategies to improve reading (see Appendix VI). I focused on reading as literature suggested metacognitive-focused interventions of this type have a high effect size (Haller et al, 1988; EEF, 2018). Likewise, reading is a skill which transcends curriculum areas and is integral to long term happiness and prosperity (National Literacy Trust, 2018). Research suggested interventions are most effective when administered in short bursts and when transferability across the curriculum is clear (Chiu, 1998; EEF, 2018). This was a challenge as the time allocated to complete this intervention was designated English Intervention on Thursdays after school. In one respect this was positive as this is an entrenched practice at Saints College and all participants expect to attend a session – this would increase the authenticity of the research and put participants at ease. However, this also meant ensuring transferability across subjects was more challenging. To mitigate this, when practising the taught strategies, I used reading and questions from other subjects such as RE and Geography (see Appendix XI).

The intervention was a six-week course. Each session focused on a different metacognitive strategy. This was informed by research (Jacob & Paris, 1987; EEF, 2018; Haller et al, 1988; Gaultney 1995; Mason, 2013) and comprised of strategies shown to be the most effective and indicative of SRL. The strategies were explicitly shared with the pupils and categorised into Planning, Monitoring and Evaluating. They were as follows:

Planning

1. My mental checklist (using mnemonics to activate prior learning when approaching exam questions)
2. Beginnings and endings (using a text's opening and close to contextualise)

Monitoring

3. Summarising
4. Context
5. Inference

Evaluation

6. Self-questioning
7. Skimming and scanning

Each intervention session lasted approximately thirty minutes. I followed the '*Instructional Stages in the Self-Regulated Strategy Development Model*' outlined by Graham, Harris and Troia (2000) and was further informed by Mason's (2013) three-fold structured approach to teaching reading. Each session opened with the activation of background knowledge, the purpose of the strategy was made explicit, the strategy was modelled, the strategy was memorised, the strategy was collaboratively practised and finally, independently practised. Literature suggested that, whilst metacognitive strategies are transferable, it is important not to package as 'thinking skills' devoid of knowledge and content. The EEF (2018 pp.15) stated that 'without cognition there is no metacognition' therefore it was important that the sessions be grounded in specific learning activities. Therefore, the modelling of the strategies was focused on English Language GCSE but the practice of the strategy was cross curricular.

After the intervention strategy was complete, it was shared with the Deputy Principal to offer feedback. She suggested that the sessions needed to be better marketed to allow pupils to appreciate the importance of the course and improve engagement. Consequently, I decided to explicitly share

research about the impact of metacognitive awareness and SRL with the pupils in a conscious and simple way (see Appendix VI).

The third research question addressed the difference in application of the intervention across gender. Whilst I was administering the intervention sessions to the boys' group, my colleague would be running the same intervention concurrently with the girls. We met on two occasions for an hour prior to beginning the intervention. I shared the aims of my research, methodology and discussed the intentions of the intervention strategy. My colleague was responsible for administering the pre and post-tests. We met for an hour after the six-week course was concluded to discuss our observations and examine the findings.

Measuring the impact

The IRA

It is accepted that measuring metacognition and SRL is challenging given the internal nature of these processes. In consideration of this, I triangulated quantitative and qualitative data to ensure a rich dataset. Prior to the intervention, participants completed a truncated 'Index of Reading Awareness' test (Jacob & Paris, 1987). This pre-test was followed by the same post-test to assess the impact of the intervention. As discussed in the literature, the IRA avoids the pitfalls of interviews such as observer bias, fabricated responses or discussions with pupils who struggle to articulate themselves. According to Jacob & Paris (1987), the IRA is designed to be sensitive enough to measure changes in metacognitive awareness over the course of a school year or after a period of instruction. Comprised of 20 questions, pupils have a single choice of three responses each of which determine a score from 0-2. One answer demonstrates no metacognitive awareness and is scored 0. One response equates to 1 mark as it demonstrates metacognition. Another response is scored 2 marks as it demonstrates application of a specific metacognitive strategy. For example:

4. If you are short on time and can only read some sentences, what do you read?

a) The ones in the middle (0)

b) Scan and read the ones with the most information (2)

c) The ones which are the most interesting (1)

(See Appendix IV)

A pupil selecting C suggests they have been able to pinpoint the part of the text which is 'interesting'. A pupil selecting B demonstrates they have explicitly skimmed and scanned to inform this decision.

Due to the limited timeframe, the questionnaire was truncated slightly to ensure the questions corresponded to the strategies taught over the course of the six-week intervention. As a result, the pre and post-test was comprised of 13 questions with a maximum score of 26. Again, due to the small participant sample and lack of a control group, I did not intend to use this data to make generalisations about social class or gender, but rather track the progress or change in individuals after the intervention was administered. For this reason, the tests were not anonymous and were completed independently.

Trace Observation

This data was triangulated with qualitative data – a trace observation. Before the intervention pupils were given a short extract and given 15 minutes reading time to prepare to answer questions on English Language GCSE Paper 1. Unlike the IRA, observer and confirmation bias effect the reliability of this method (Cohen et al, 2011 pp.457). However, I aimed to increase validity by triangulating the findings of both methods. I used an observer-as-participant model (Cohen et al, 2011 pp.457) as the role of the researcher was clear to the participants and the researcher interacted with the group as unobtrusively as possible. The observation was semi-structured; a suggested 'agenda of issues' was identified based on the research (see Appendix III). The observer was encouraged to look for highlighting, following and tracking reading with a pen, noting down previously

taught mnemonics, summarising, note taking etc. During the silent reading time the observer took notes (see Appendix X) and then afterwards interpreted these to draw conclusions. This trace observation was repeated after the six-week intervention was completed as a point of comparison.

Semi-structured Interview

The final method used to address the second research question was a semi-structured interview with participants. The pupils were asked a series of questions on the efficacy of the intervention and its transferability (see Appendix V). They answered these questions in note form on a piece of paper before being asked to explain their ideas verbally. I conducted the interviews with the collaborating colleague. Only open questions were asked to avoid leading pupils' responses. For example, 'Can you explain why?' or 'What did you mean when you noted this down?'. One interviewer took notes whilst the other engaged with pupils to promote authenticity and mitigate response bias (Given, 2008 pp. 60). To put them at ease, pupils were interviewed in groups cognisant of social dynamics. Prior to the interview I reminded the pupils of the nature of the research and reinforced that there were no 'wrong' answers.

Considering comparison

I addressed the final research question (*Is there a difference between boys' application of metacognitive strategies compared to girls receiving the same intervention?)* through the IRA pre and post-test. The trace observation test was also repeated at the beginning and end of the intervention. My collaborating colleague and I met to share and discuss notes taken during the trace observation pre and post-test.

Collaboration

Collaboration underpinned every aspect of my research. In the early stages, the collaboration was with colleagues in the primary phase of Saints College through my observation of SRL. This was

illuminating and guided my review of the literature. I also collaborated with school senior leaders who offered feedback on my methodology and intervention strategy. Finally, I collaborated with the colleague who administered the intervention running concurrently with the secondary group of participants. This colleague was instrumental in establishing the aims of the intervention strategy and shaping its delivery. We met briefly each week to discuss our progress and met more formally to allow for delivery of training on the strategy and methods of data collection. We also discussed the findings together and evaluated the overall impact. Furthermore, my research was presented to the wider school community in July as part of a 'Celebration of Inquiry' evening held by Saints College annually.

Limitations

There were various limitations of this research, namely the small participant sample. A dichotomy existed between increasing the sample size in the hope of increasing validity or following the guidance of the literature and improving the chances of the intervention being a success by narrowing the group of participants (Cohen et al, 2011 pp. 143-145). It was not possible to have a control group because of the small sample size; I could not replicate pupils from similar backgrounds or circumstances. As a result, no conclusions can be made that purport to address the relationship between FSM, metacognition and gender. Instead, only conclusions about the specific participants could be drawn.

There are various limitations of both quantitative data and qualitative data, some of which have been outlined earlier (see methods). One pervading limitation is the observer paradox (Labov 1972; Cohen et al, 2011). My dual role as researcher and teacher would inevitably impact my findings. To account for this, I used a range of methods to allow triangulation of results and in turn increase validity. The collaboration with a colleague further mitigated observer bias. However, the collaboration itself raised additional limitations. It was difficult to determine causality of differences in application of the metacognitive intervention strategy. Would a difference be a result of gender, or the result of a difference in how the intervention was delivered? Multiple researchers increased the

risk of confounding variables. At one point during the intervention my colleague veered off course and subsequently taught several strategies in a single session. Likewise, due to staff sickness I completed the second trace observation with the girls' group. This did not follow the intervention design. It is also worth noting that research suggests that any intervention has a positive impact, regardless of the content (Haller et al, 1988; Walberg 1986). The increased focus on this group of pupils may have improved their reading proficiency, rather than the strategy itself.

There were also limitations caused by the instruments and methods used to measure impact. The validity and sensitivity of the IRA has been deemed only 'marginally acceptable' and researchers suggest it should be used amongst a portfolio of other assessment (Mclain et al, 1991 pp.82). Likewise, the IRA was designed for pupils ages 9 – 11. Participants in this investigation were aged between 15 and 16. Collectively they had an average reading age of 11 but I acknowledge that their increased cognitive development may have affected the veracity of their scores. Perhaps they were able to guess what the test was looking for. Perhaps they felt patronised by the process and did not answer truthfully in protest. The quantitative nature of this method meant that I was not able to ascertain this through discussion. Likewise, with qualitative methods such as the trace observation various confounding variables may have existed; the pupils may have seen the extract before, been influenced by or copied the behaviour of their peers etc. The Deputy Head's suggestion that the sessions be better 'marketed' and research shared with the participants may have increased response bias; the pupils may have felt a positive response was required from them as this was in line with previous research. Observing external behaviour as a sign of internal cognition is inevitably flawed as the problem of inference arises (Cohen et al, 2011 pp.473). One cannot always ascertain intention from observation – the pupils may have used highlighters or underlined as they have been rewarded for it in the past, rather than it being a sign of metacognitive strategy.

One final limitation was the attendance of the group. This was a confounding variable which undoubtably will have affected my ability to draw conclusions from my findings. On occasion, pupils

arrived late to sessions or missed sessions entirely. Given the cumulative nature of the strategy and the pre and post-test design, some pupils' experience was patchy at best. Thus, the impact of the intervention will have been somewhat diluted.

Ethical Considerations

Ensuring my research was ethically robust was of the utmost importance. All actions taken were part of my modus operandi at Saints College (observation, leading intervention, collecting data on pupil progress). However, all participants were informed about the research, full CUREC approval was granted and formal consent was gained from the Headteacher. As previously mentioned, intervention sessions were already established at Saints College and parents notified.

I was conscious that ethical issues around 'harm' required consideration in case the intervention proved unsuccessful (BERA, 2018 pp.4). If the participants' self-efficacy and regulatory behaviours did not change, or change for the worse, this could be a factor in preventing them from making the progress necessary to achieve a pass at GCSE. However, this could be the case regardless of any conducted research. All intervention and introduction of different teaching strategies could accelerate or decelerate progress. As a result, I can conclude that no harm to the participants occurred as a direct result of the research. In line with the BERA guidelines (2018), I consistently aimed to maximise benefit and minimise harm.

I took steps to avoid power relationships affecting the pupils' engagement with the research (BERA, 2018 pp.13). My dual role as researcher/teacher may have put additional pressure on participants to respond positively when reporting their self-efficacy and self-regulatory behaviours. To counter this, all questionnaires were completed alone and pupils were given the option of anonymity. Likewise, all data gathered from pupils as part of the pre and post-test was only reported anonymously. Interviews took place in small groups to ensure that participants were at ease. I ensured that these interviews did not impact pupils' learning - they took place outside of lesson time at the pupils' convenience.

This dual role also impacted my relationship with the colleagues I collaborated with (BERA, 2018 pp.19). I was conscious not to overburden them with additional workload. I ensured that the colleague with whom I ran the interventions was already heavily involved in the planning and delivery of school interventions. Any additional meetings to discuss the research were agreed well in advance. I also arranged teaching relief to account of the time taken to discuss the research.

Finally, the findings of my study were shared with all participants to ensure full disclosure. The research was also presented at Saints College's celebration evening in July. This guarantees that any benefit to my own practice was shared with the wider school community (BERA, 2018 pp.38).

Findings

i. Research Question 1

'What is the perception of lower attaining, FSM eligible boys at Saints College of their self-efficacy'

Self-Efficacy Questionnaire

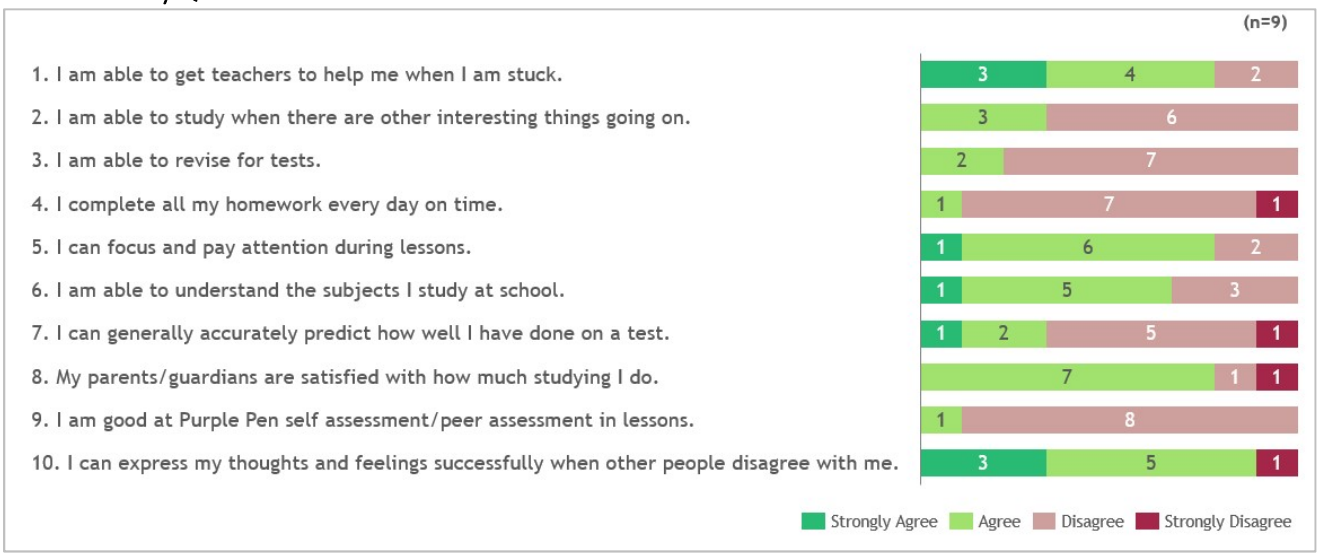

Figure 1: Results from Self-Efficacy questionnaire

Pupil responses were mixed. However, despite the small participant sample, it was possible to observe some common trends. The majority were confident in:

- their ability to request and receive help from teachers
- their ability to focus in lessons
- their parents' positive perception of the amount of studying they do
- their understanding in lessons
- their ability to communicate successfully with others during disagreements

The majority of pupils disagreed that they were:

- completing homework on time and everyday
- 'good' at 'Purple Pen Reflection time'
- able to revise for tests

- able to focus despite interesting distractions
- able to accurately predict test performance

The results of two sets of questions offered an interesting insight. Firstly, all but one disagreed they complete homework daily and on time (the homework policy at Saints College requires pupils to complete at least thirty minutes of set homework every night). And yet, all but two stated their parents are happy with the amount of studying they do. This was surprising given the boys have negative 'behaviour for learning' scores which regularly result in communication home and detention. It is difficult to determine the cause of this discrepancy. It seems plausible to assume the parents of these boys do not express concern about the lack of homework they complete. Secondly, most of the boys stated they felt positive about their ability to concentrate and focus in class and yet roughly the same proportion disagreed that they were able to concentrate when 'interesting things are happening'. There seemed to be a discord between whether they *could* concentrate and whether they *do* concentrate.

Only one pupil added a comment to qualify their answer; on Question 1 (*I am able to get teachers to help me if I get stuck*) the pupil noted that 'it depends on the teacher' (See Appendix IX). Conscious of observer bias and the lack of further data, it is difficult to draw conclusions from this statement. One possible inference is that this suggests a negative opinion of self-efficacy as the pupil's ability to 'get help' is determined by extrinsic factors such as the relationship with the teacher.

Overall, the data suggested that the group had a negative opinion of their academic self-efficacy regarding independence or self-regulatory behaviours (Purple Pen reflection time, completing homework, revising for tests, focusing despite distractions). The group had a positive opinion of their self-efficacy concerning classroom relationships (communicating with others, requesting help, their ability to focus).

ii. Research Question 2

'Does an intervention focused on developing metacognitive strategies for reading have a positive impact on low attaining, FSM eligible boys' self-regulation?'

Index of Reading Awareness

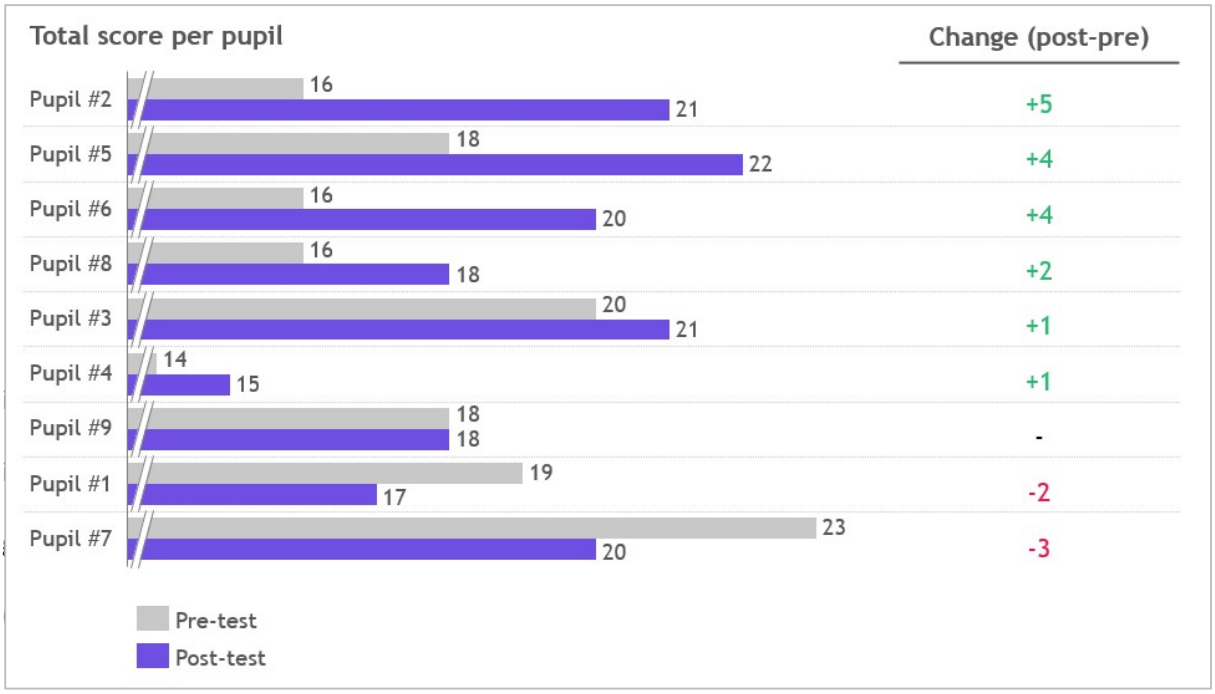

Figure 2: Results of pre and post-test of IRA (boys' group)

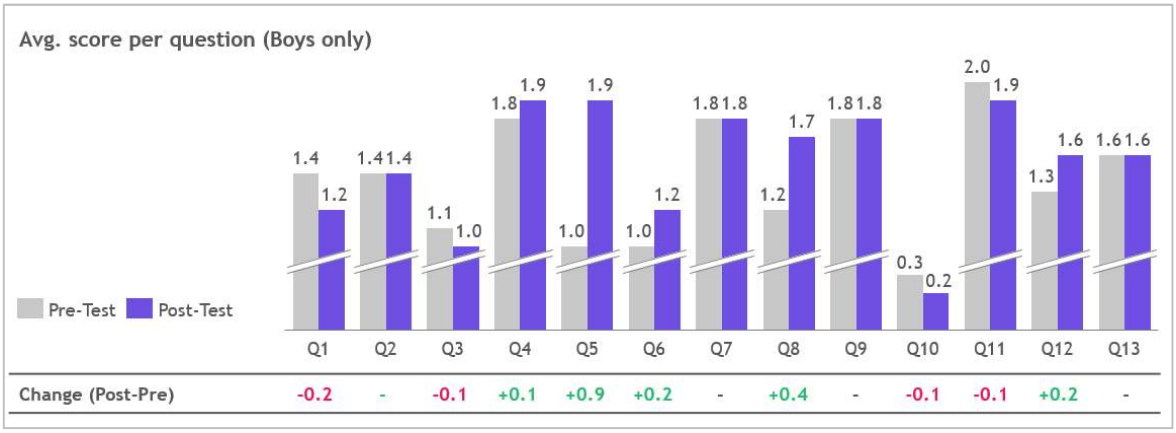

Figure 3: Average difference in score per question in pre and post test (boys' group)

The chart above shows the average score per question in the pre and post-test. Due to the small sample it is difficult to draw complete conclusions about increased or decreased scores. However, arguably one can observe significant gains on question 5 (*If a teacher told you to remember*

the general meaning, what would you do?) and 8 *(Why do you go back and read things again?).* Interestingly, one pupil added an additional category onto their test. For question 4 (*If you are short on time and can only read some of the sentences, what do you do?)* the pupil added 'read the last and first paragraph' (see Appendix VIII). Whilst this scored nothing on the IRA, this was arguably correct and a direct link to a strategy taught during the intervention.

Trace Observation

Pre- test

Some external behaviours indicative of SRL were observable during the pre-test. One pupil used a pen to follow along as they read. Another underlined sentences. One pupil began to make some annotations on the first paragraph. However, the pupils only read through the text once. This was observable as it was a two-sided extract and all only turned the page once. Some low-level disruption began to occur after six-minutes (see Appendix X). At this time the pupils had finished reading the extract. One boy began to whistle and another began to flick pieces of paper. Whilst two pupils had made some basic annotations and underlined some sentences, these were all in the opening paragraph of the extract (see Appendix VI). Two of the boys began to talk off topic. During the final five minutes of the reading time two boys slumped over and were visibly disengaged.

Post – test

Observation during the post-test was significantly different. Pupils used the fifteen-minute reading time far more productively. Seven out of the nine pupils turned their pages back and forth several times which indicated re-reading. The extracts themselves were covered in annotations (see Appendix VII). This included identification of techniques, summarising each paragraph and noting down questions - all of which were explicitly taught during the intervention sessions. Several pupils noted down mnemonics which had been taught and discussed. One boy in particular had several questions to ask during the reading time and struggled to be silent. These were indicative of inference

e.g. when he asked 'Do the kids live in a poor area?'. During the last five-minutes there was still some distraction (one pupil scribbled on another pupil's extract and a discussion ensued). Likewise, one pupil slumped over for the last few minutes. Whilst there was an observable difference in the group from the pre-test, one individual's behaviour did not change. This pupil appeared disengaged and slumped throughout. He appeared to only read the opening of the extract and do very little for the remainder of the time.

Semi – structured Interviews

The response in the interviews was positive. All pupils articulated key strategies learned throughout the intervention. These included:

- *'How to read the extract and properly analyse it'*
- *'How to infer'*
- *'How to annotate and read the extract properly'*
- *'Skimming and scanning'*

The pupils commented on strategies they had used in the recent mock exams. In some cases, pupils used more than one strategy. One boy stated that he used the 'mental checklist' strategy and he had intentionally summarised each paragraph to aid his understanding. One pupil stated 'all of them' although when probed only named two (summarising and mnemonics). However, one pupil stated that they did not use any of the strategies. When asked 'Why not?' he responded, 'I didn't think I had the time in the real exam'. Interestingly, this pupil's IRA score had gone up substantially and the trace test had demonstrated several external behaviours indicative of SRL.

Only two pupils recognised transferability beyond English – they reported using the strategies in Geography, RE and History. Interestingly, texts from these curriculum areas had been used when practising reading strategy acquisition in the sessions. Most pupils were emphatic in their view that the strategies were not relevant in other lessons. Responses here included:

- *'No, it is not possible'* qualified with, *'You just don't need to read like this in other lessons because you don't get the same reading time like in English. There's less to read'*
- *'No only English'* qualified with *'I didn't think to use in another lesson'*
- *'I've just used in English; you wouldn't need this is DT and Science'*

All pupils described the sessions as useful. One pupil noted:

'Yes the intervention was very useful and I hope it improves my mock grade from last year if it did this was very helpful and the lessons will stick until I leave or my exam'.

When prompted to explain what was useful about the session, the pupils focused on the strategies they had used the most. Five out of the nine boys mentioned that the strategies helped them not to forget what they had read. One boy said that he 'used to just start the paper' but now understands 'how to analyse and read the extract properly'. During the interview I reiterated that it was important they felt as though they could be honest and negative responses were welcomed. Two boys responded to this. One stated that it was only useful if the strategy was new ('I already know context'). The second stated that 'some of the strategies aren't really relevant, like inference'. When asked to explain this further, the pupil struggled to articulate their thoughts and said, 'I dunno you just don't get asked to do that'.

iii. Research Question 3

'Is there a difference between boys' application of metacognitive strategies compared to girls receiving the same intervention?'

IRA

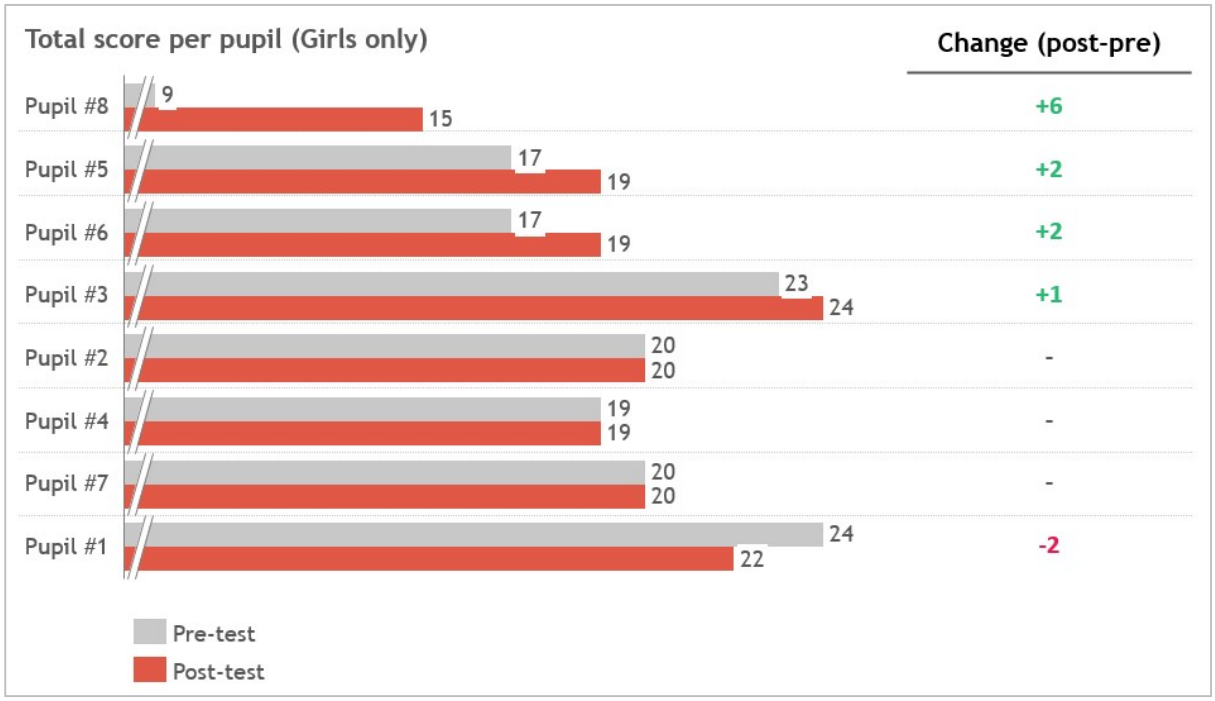

Figure 4: Results of pre and post-test of IRA (girls' group)

On average, the girls performed better on the pre-test; more girls than boys scored into the 20s and late teens. The girls had a median score of 19.5 compared to the boys' of 18. Statistically, collectively the girls' performance on the pre and post-test were the same (both a median score of 19.5). However, this is slightly misleading given the small sample. Several of the girls did make improvements; noticeably Pupil 8. However, the gains were on average smaller than the boys – as one would expect, given their higher initial scores.

Perhaps due to their higher starting point, all gains were marginal.

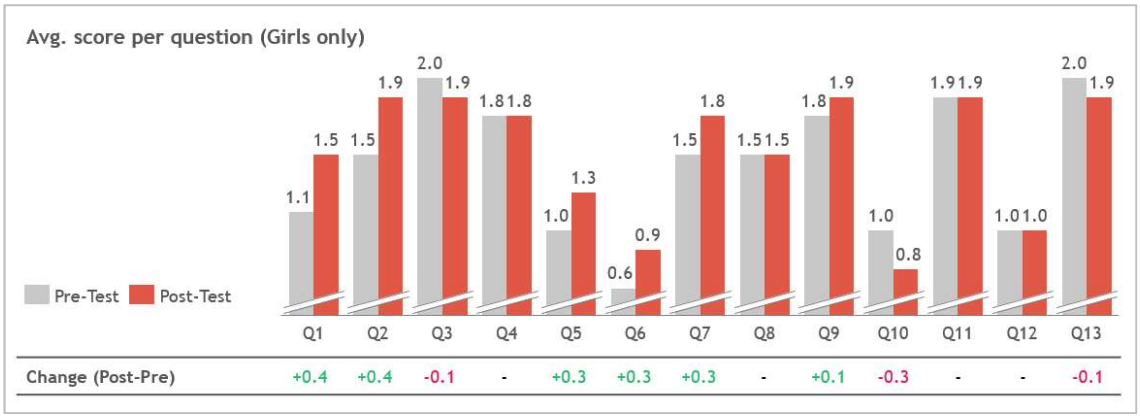

Figure 5: Average difference in score per question in pre and post-test (girls' group)

Trace observation

Pre-test

My colleague noted several external actions indicative of SRL. For example, using a highlighter, annotating key words, re-reading key passages, turning pages back and forth to re-read etc. Interestingly, my colleague recorded that the girls were very conscious of each other. Several girls looked at the behaviour of their peers and 'copied' this. For some, this resulted in beginning to annotate their extract. At one point during the trace observation my colleague asked a pupil, 'Why did you highlight that?' and she was unable to articulate the reason. The girls' extracts were annotated in far greater depth than the boys (see Appendix VI). Language techniques were identified, and mnemonics noted down. My colleague reported no behavioural issues and said all but two of the girls used the reading time in its entirety. None of the girls' body language became slumped or obviously disengaged. However, one girl gave up reading part way through the extract and began silently observing the rest of the group.

Post-test

I completed the second trace observation of the girls' group (see limitations). The behaviour of the girls was very similar to my colleague's observations in the pre-test. The girls used the fifteen-

minutes carefully and read the extract several times. For all but one pupil, the extract was covered in annotations after the time concluded. There were no behavioural incidents and their body language suggested engagement. The strategies observed did mirror with the intervention lessons. Several girls noted down mnemonics and summarised each paragraph to ensure they were following on. Two pupils also noted down key questions as taught in the 'self-questioning' intervention session. Unfortunately, two girls were not in attendance which affected comparability to the first trace test.

Discussion of Findings

i. Research Question 1

'What is the perception of lower attaining, FSM eligible boys at Saints College of their self-efficacy'

The boys' responses to the truncated self-efficacy questionnaire supported my hypothesis (lower attaining FSM eligible boys at Saints College would have a *negative* perception of their self-efficacy). The boys' responses did suggest a negative perception of their ability to regulate their learning. For Zimmerman (1995), self-efficacy and self-regulation are mutually perpetuating. The responses to certain questions suggested a negative perceived self-efficacy and consequently a lack of self-regulation. Zimmerman (1995, pp.217) asserts that self-regulated learning is the action of using metacognitive strategies when confronted with 'fatigue, stressors, or competing attractions'. Two thirds of the boys demonstrated a lack of belief in their ability to do so. Likewise, the data suggested the boys are not aware of their strengths, weaknesses and goals – indicated by their struggle to revise, self-assess and accurately predict test performance. Winne (1995) determined accuracy in a 'Judgement of Learning' as indicative of metacognition and self-regulation. The data from the questionnaire suggested that the boys in this sample struggle to accurately predict test performance, thus suggesting a negative opinion of their self-efficacy.

The responses suggested the boys remain 'tacit' learners (Perkins, 1992) reliant on teacher feedback and support. High levels of independence and self-efficacy are indicative of high academic performance (Abu Hilal & Al Khati, 2011; Zimmerman, 2010; EEF, 2018); the responses to the questionnaire suggest that the participants in the sample have a negative opinion of their self-efficacy as they struggle to adopt self-regulatory behaviours.

However, some participant responses could be interpreted as rejecting my hypothesis. Collectively, the group were positive about their ability to ask for help, understand in lessons and communicate successfully with others. Self-efficacy is inherently linked to social feedback and pressure (Bandura, 1977). The data suggested that the group have a positive opinion of their self-efficacy in terms of their interaction with external factors and stimuli. Relationships with peers and teachers were reported positively. Negative self-efficacy was only demonstratable through questions relating to internal and independent processes. The reductive nature of the questionnaire means drawing conclusions about causality is difficult. One possible interpretation is that the boys' lack of academic self-efficacy and self-regulation is mutually reinforcing and thus a difficult cycle to break. The group became increasingly reliant on teacher support to navigate the learning process and consequently experience success. Research suggesting that boys interact with external stimuli, receive more attention in the classroom and are less able to engage in internal dialogue supports this interpretation of the data (PISA, 2015; Matthews et al., 2009).

The participant sample were all FSM eligible boys from working-class backgrounds. As discussed earlier (*How does this help us to understand the gender gap in UK Schools?)* historically, research and theory has offered crude interpretations of the relationship between class and education (Ghaill, 1996; Ingram, 2009). Typically, 'working-classness' has been regarded as a 'hurdle' one must overcome (Ingram, 2009). However, there is undeniably a negative correlation between identifying as a White British, working-class male and negative educational outcomes (Parliament, 2006). One explanation is a lack of educational capital (Basit, 2013; Bourdieu, 1997); perhaps young

boys from this background place a different level of importance on academic success. Likewise, Bourdieu's theory of habitus suggests the disconnect between domestic values and educational values accounts for the attainment gap (Bourdieu 1986, 1997; Stahl, 2012). Responses to the questionnaire focused on homework ascribe to this interpretation. Whilst all but one participant admitted to not completing homework, seven out of nine participants agreed that their parents are happy with the amount of studying they do. One must be wary of interpreting this as a contradiction as this would demonstrate a deficit-based view of the participants' homelife. It would assume that the boys' parents are incorrect in their assumption that the amount of work the boys complete is acceptable despite a conflicting opinion of the school. However, if one attempts to remove this bias, it remains clear that there is undoubtably a disconnect between the parents' attitudes to homework and that of the school. Thus, a disjuncture between habitus and field does appear to exist (Stahl, 2012; Reay, 2004). Perhaps, the group's lack of self-efficacy regarding academic self-regulation is a method of protection against a duality of self (Stahl, 2012; Reay, 2004). If field and habitus do not align, it could account for the mixed view of self-efficacy demonstrated in the responses to the questionnaire.

Overall, the responses to the questionnaire suggests that the participants do have a negative perception of their self-efficacy in relation to their ability to independently regulate their learning.

ii. Research Question 2

'*Does an intervention focused on developing metacognitive strategies for reading have a positive impact on low attaining, FSM eligible boys' self-regulation?*'

I hypothesised that the intervention would have a positive impact on FSM eligible boys' self-regulation. Arguably, the interventions had a positive impact on the participants' metacognition but not necessarily their self-regulation. The data showed a marginal improvement on the IRA post-test.

Some individuals made significant gains and the average scores on particular questions increased. This could suggest that some strategies were more effectively taught than others (arguably 'skimming and scanning' and 'summarising'). The robustness of the IRA as a measure is open to debate. Whilst the IRA does help to eliminate observer bias and fabricated responses (Jacob & Paris, 1987), without further data to contextualise pupil scores, few conclusions could be drawn. One example of the problems with the IRA as a measure was Pupil 5's responses in the post-test. Pupil 5 added an additional category (see Appendix VIII) to demonstrate learning over the course of the intervention. This was not credited in the score but was telling. Equally confounding was a pupil who appeared to make significant gains on the IRA but during the semi-structured interview could not see the need to use the reading strategies in an exam.

When the IRA data is triangulated with the pre and post-test trace observation data, it is possible to gain a clearer picture of the impact of the intervention. The difference in behaviours demonstrated in the trace observations before and after the interventions was striking. There was a clear difference in the strategies adopted by the pupils. Whilst external behaviours are only a proxy-measure of internal processes, there was a clear change in the approach taken by most participants. Pupils were more engaged and there was clear evidence that the pupils were monitoring their reading by employing a variety of strategies – indicative of SRL and metacognition.

As with the IRA, there are limitations of trace observations. To mitigate this, this data was integrated with the data from the semi-structured interviews. This offered further insights into the impact of the intervention. The combined data from the trace observation and the IRA was very positive. However, when considered alongside the responses from the interviews, less so. Whilst the boys were overwhelmingly positive about the interventions and able to articulate strategies they had learned; their view was somewhat myopic. All but two of the boys did not believe the reading strategies were transferable. Pupils who performed highly on the IRA and externally indicated increased metacognition did not see the relevance of the strategies beyond English. One pupil clearly

saw the intervention as a means to an end (*'I hope it improves my mock grade from last year if it did this was very helpful and the lessons will stick until I leave or my exam')* Winne (1995) distinguishes between procedural and declarative knowledge as a marker of SRL. The latter being the knowledge of 'how' and the former being 'what'. The semi-structured interview data suggested that for some of the participants they knew 'what' strategies could be used but not necessarily 'how' the strategies might support their learning in the long term. The responses suggested that some became 'Aware' but not yet 'Strategic' or 'Reflective' learners (Perkins, 1992). The cause of this is difficult to ascertain. Theory suggested that the intervention should be grounded in subject content and raised the risk of packaging the intervention as 'thinking skills' which might encourage needless rumination (Efklides, 2011; Claxton, 2009). However, theory also suggested the need to demonstrate transferability (Chiu, 1998; EEF 2008). As part of the intervention design, I attempted to practise the strategies using cross-curricular content. The interviews suggested that this had proved successful for the two pupils who recognised transferability but not for the majority. SRL and metacognition do not occur in a vacuum (Bussey, 2011). Perhaps the rigid distinctions between curriculum areas at Saints College and the labelling of the intervention as 'English Intervention' inhibited the boys' ability to see beyond the boundary of the English classroom.

In conclusion, the findings suggest the intervention had a positive impact on pupils' metacognitive awareness. There was an increase in the IRA results and a significant change in the observable strategies implemented during the trace observation post-test. Participants were clearly 'thinking about their thinking' (Flavell, 1979). However, if SRL is 'learning to learn' and both strategic and reflective, the lack of perceived transferability suggests promotion of self-regulatory behaviours was less successful.

iii. Research Question 3

'Is there a difference between boys' application of metacognitive strategies compared to girls receiving the same intervention?'

There was a clear difference in the boys' and girls' application of metacognitive strategies in both pre-tests. On average, the girls scored more highly on the IRA pre-test. This could suggest the girls had better prior metacognitive awareness. This supports previous research on the topic (Logan & Johnstone, 2010; Adams & Symonds, 2018; Reynolds et al, 2008). The trace observation pre-tests also leaned towards girls' superiority. The boys' demonstrated a disengagement through clear external cues: talking off topic, flicking paper and slumping over. None reread the extract and annotations were minimal. This behaviour contrasted to that of the girls (see Appendix VI).

Research suggests that teachers perceive boys to be more disruptive (PISA, 2015; Logan & Johnston, 2010; Wachs et al, 2004) and affected by external stimuli. The trace observation was a prime example of this – the girls were quieter, appeared more focused and keener to demonstrate 'positive' learning behaviours. What accounts for this difference in behaviour? One possible interpretation is the difference in socialisation of girls. As discussed in the literature, gender stereotypes purport to girls' quiet and focused attitudes (Berekashvili, 2012; Bussey 2011; Adams & Symonds, 2018). Girls are said to have better control over 'soft skills' and ability to engage in an internal dialogue (Curtis 2009; Adams & Symonds, 2018). Both pre-tests aligned with this perspective. However, when my colleague questioned one pupil, she was unable to articulate the reasons for highlighting sections of the text. It is impossible to fully account for this statement without further discussion or data collection. However, one possible interpretation is that girls have been socialised to present certain academic behaviours – whether this is underpinned by metacognition is open to debate.

I hypothesised that there would be *a positive difference* in the impact of the same intervention given to girls compared to boys but that this would be negligible. I believed the girls would outperform the boys; this was proven to be incorrect. Whilst the girls did outperform the boys in the pre-test, the IRA and trace observation data suggested that the intervention had a greater positive

impact on the boys' group. One could attribute the lack of marginal gains made by the girls' group to their higher scores in the pre-test. However, the trace observation data reinforced that the intervention was more successful when administered to the boys' group. Logan & Johnston (2010) suggest girls are better at applying reading strategies. Perhaps, this accounts for the higher pre-test score. Discussions with my colleague after the intervention yielded some other interpretations of the data. She asserted, 'the girls kept suggesting that they already knew the strategy, they pushed for the intervention to be more focused on exam practise'. This exemplifies a difference in the boys' and girls' perception of their ability to self-regulate their learning. Given that the girls have similar prior attainment to the boys, this difference in confidence regarding metacognitive awareness and self-regulation is interesting. Without further data it is difficult to interpret. As Perry & Rahim (2011) argue, self- efficacy and self-regulation are embedded in pupils' and teachers' social milieu. In line with research, are the girls' demonstrating their superior ability to self-regulate? Is this a result of environmental factors, social norms and gender stereotyping? Or, are the girls simply better at presenting external behaviours which suggest this? Further research is needed to contextualise the findings of this investigation.

The boys' enthusiasm to apply the strategies and their positive responses to the questionnaire could be the result of a range of factors. Firstly, I delivered the intervention to the boys and, given my dual role as researcher, my enthusiasm for the intervention was most likely palpable. Perhaps the boys' actions were compliance and an example of response bias. Secondly, the boys may have responded to the systematic 'rules based' structure of the intervention better than the girls; research has demonstrated that boys have a more positive response to a phonological and synthetic approach to reading (Logan & Johnston, 2010; Baron-Cohen, 2002). The intervention sessions were structured cumulatively and presented as a series of strategies that could be applied to a problem. Perhaps this 'rules-governed system' (Baron-Cohen, 2002) was more attractive to the boys' group. This might also explain the change in behaviour during the trace observation post-test. Research suggests that boys are more likely to be motivated by extrinsic factors whereas girls are more likely to be mastery

orientated and driven by self-worth (Bussey 2011; Abu Hilal and Al Khati, 2011). The external behaviours presented by the boys' group in the post-test trace observation could be symbolic of a drive to receive some external gratification. Arguably, gratification would be achieved by looking at an extract covered in annotations demonstrating metacognitive strategy application. In contrast, if the girls are motivated by mastery orientation, their behaviour may have changed less. Perhaps they did not feel the need to enact strategies they were not sure were effective, or they did not feel the need to externally demonstrate their cognition – internal, introspective acknowledgement may have sufficed.

Overall, there was a difference between boys' and girls' application of metacognitive strategies after receiving the intervention. However, this difference was observable from the outset. Despite girls performing statistically better, the boys' responded more positively to the intervention than the girls.

Conclusion

The various limitations of this study mean it is difficult to draw any concrete conclusions from the data. However, the various *suggestions* are compelling. Firstly, the intervention strategy effectively motivated the boys to succeed. The contrast from the pre and post-test trace observation was pleasing to see. Perhaps the additional support itself was enough to incite this reaction. The boys were excited to read and desperate to demonstrate progress. This was transformative; their positive attitude to learning in an after school, compulsory intervention session was unprecedented. It seems fair to conclude that, tacit or not, their metacognitive awareness increased. However, several individuals were still reliant on teacher instruction and performance-orientated rather than focused on the planning, monitoring and evaluation of learning. It is worth reflecting on Claxton's (2009, pp. 181) research cautioning that focusing on a 'sayable strategy' and 'thinking too hard' can detract from the implicit cognition involved in learning. The group were so focused on employing a strategy that perhaps they forgot why it was needed. However, the progress made in a six-week period was

impressive and supported various research on the positive impact of interventions focused on metacognition. A solid foundation has been established from which skills can be continued to be practiced and developed.

The group's difficulty to recognise the transferability of these skills seems indicative of a wider educational issue. As discussed in the introduction, for some, recent curriculum reform pitches knowledge and skills against one another. To reiterate the views of Bleiman (2018, n.p.), a 'false dichotomy' is at play. In the same way that skills and knowledge are intertwined and cannot be separated, nor can metacognition and the declarative or procedural knowledge it aims to cultivate. Unfortunately, the structure of our school system rigidly separates curriculum areas preventing the cross over in skills and knowledge from being recognised. Perhaps this accounts for the boys' myopic view of the intervention and the challenge in transferring the skills from one context to another.

One interesting observation did not directly address a research question but was compelling none the less – the self-efficacy questionnaire gave the boys a voice. Most had never been asked their thoughts and feelings about school before. At times they found it difficult to articulate their ideas. How can I be expecting pupils to reflect and regulate when adequate opportunities are not provided for them to reflect beyond individual pieces of work? It is the responsibility of the teacher to establish a learning environment that is the right climate to enable self-regulation.

The question of environmental factors and their effect on pupils continued to arise throughout the investigation. Most significantly when addressing the third research question concerning girls' application of the metacognitive strategies. The girls were far less receptive to the intervention and my colleague described them feeling as though they 'were being taught to suck eggs'. Yet the girls were not *significantly* 'better' than the boys on the IRA test, nor do they perform better in tests generally. However, in line with the 'folk pedagogy' (Bruner, 1999 pp.5) outlined in the introduction, their observable learning behaviours did appear superior. Wider teacher perception was not explored through this study but would be a compelling topic for further research. What are our

expectations of girls at Saints College compared to boys? What are the root causes of this? If the gender gap is symptomatic of teacher perception then perhaps the intervention would be better focused on *teachers'* practice. Metacognitive interventions might be an effective way to 'repair' the problem but perhaps changing teacher perception and reactions would prevent the 'break' in the first place.

The research itself did not attempt to tackle the question raised in the literature of why White British working-class boys are less likely to succeed. However, indirectly the self-efficacy questionnaire did suggest a discord between home and school and an inability to self-regulate learning. Again, the small sample size makes any concrete conclusions impossible. However, it is possible to conclude that the intervention did positively impact both the motivation and self-regulatory behaviours of this group of typically marginalised pupils.

Implications for practice

I set out to achieve catalytic validity to 'better understand my world in order to transform it' (Cohen et al, 2003 pp.187). This process has certainly transformed my professional practice and application of pedagogy. Firstly, the volume of research and level of thought required to plan the intervention highlighted that this had been previously been one of my shortcomings. Ensuring that intervention is evidence-based, implemented in a thoughtful way and evaluated will now be grounded in my day-to-day practice. This will help to ensure that the vulnerable pupils in my care receive the support they deserve. Similarly, metacognitive reading strategies now underpin my planning and classroom interactions. I have led whole school training on the importance, and implications of, developing metacognition and self-regulation. I am encouraging all pupils to become better at regulating their learning which has positively impacted the learning dispositions of pupils across my classes. I am also far more conscious of monitoring and adapting my practice to support pupils from traditionally marginalised backgrounds. I am committed to giving these pupils a voice and an opportunity to reflect on their learning; I am now asking pupils to evaluate their learning after each

topic to bolster the development of their self-regulatory behaviours. Finally, I am conscious to mitigate any gender bias that exists in my classroom and develop and expect 'soft skills' and regulatory behaviours from *all* pupils.

The research has also transformed the teaching across the English department. The strategies are now embedded into our schemes of work from year 7 to year 11. The colleague who supported the delivery of the intervention reported:

"…the intervention has completely changed the way that I teach reading and led me to reflect on how I encourage pupils to take greater responsibility for their learning. I'm teaching all of my pupils to 'read' rather than report back."

The pupils may have struggled to see the transferability of the strategies when taught in the six-week intervention, but they will be a key part of any future year groups' repertoire. Most importantly, a dialogue about metacognition and self-regulation now exists between both staff and pupils at Saints College.

More broadly, Saints College is beginning to transform too. Whilst this research is a small part of the wider picture, the gender gap has begun to close. The 2019 GCSE results were more positive; pupils eligible for FSM and PPG achieved a positive Progress 8 score of 0.3 overall and 0.6 in English - higher than the national average. In Literature, girls achieved an average grade of 7 and boys' 6; this was two grades higher than 2018. Whilst FSM eligible boys sit at 5+, they retain a positive progress measure of 0.5 meaning that they are performing better than pupils with similar prior attainment across the country. Research on developing metacognition and self-regulation has been shared with colleagues as part of continued professional development and the annual celebration of inquiry evening. Saints College has also applied to become an EEF research school in order to ensure that evidence-based approaches which support progress for *all* continue to be adopted. The increased awareness and discussion generated through this research and the collaboration with the wider

school community has helped to drive forward standards in education and truly ensure that no one is left behind.

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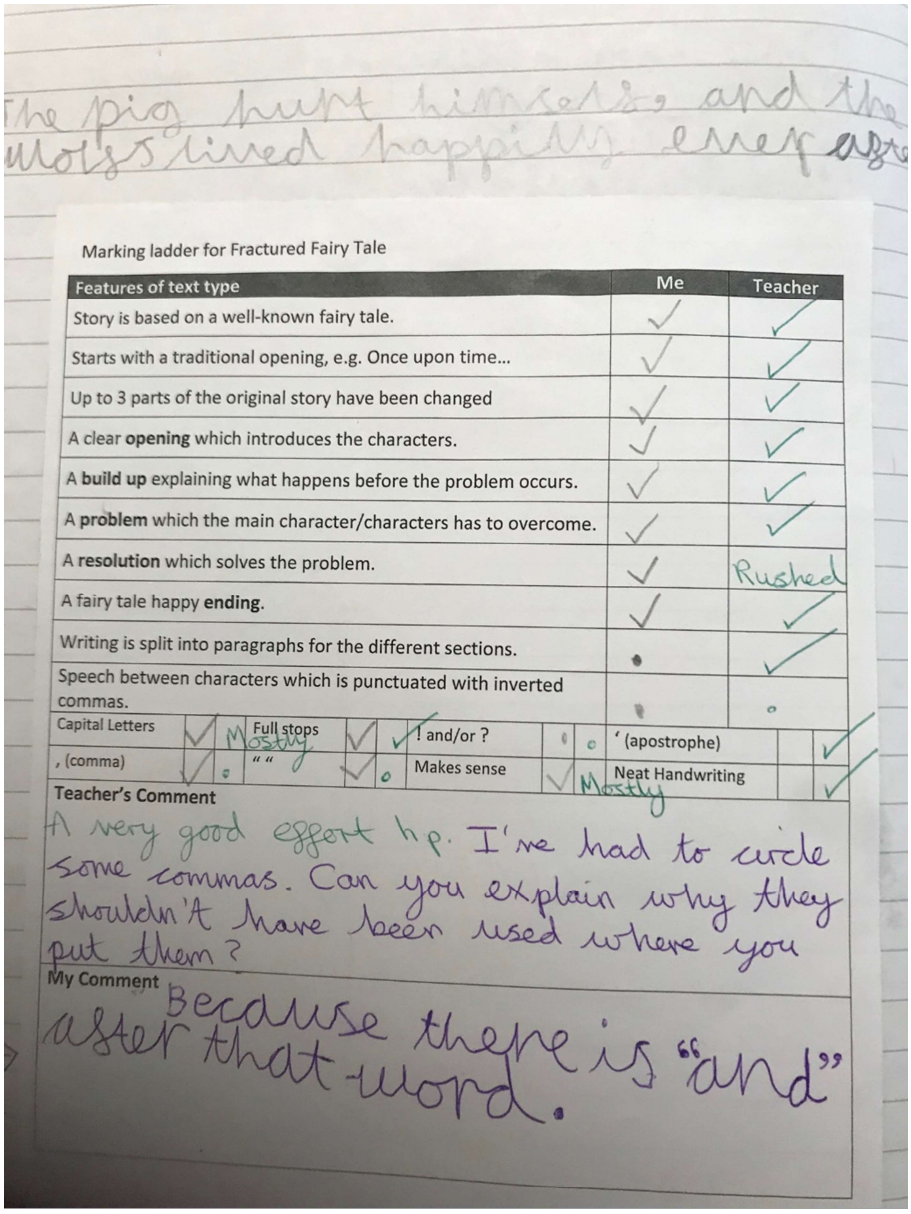
pp.663-67.

Appendices

Appendix I:

Example of apparatus used to assess a pupils' 'Judgement of Learning'.
Below, a Year 2 pupil assesses their work to monitor and evaluate their progress.



The pig hurt himself and the wolf's lived happily ever after

Marking ladder for Fractured Fairy Tale

Features of text type	Me	Teacher
Story is based on a well-known fairy tale.	✓	✓
Starts with a traditional opening, e.g. Once upon time...	✓	✓
Up to 3 parts of the original story have been changed	✓	✓
A clear **opening** which introduces the characters.	✓	✓
A **build up** explaining what happens before the problem occurs.	✓	✓
A **problem** which the main character/characters has to overcome.	✓	✓
A **resolution** which solves the problem.	✓	Rushed
A fairy tale happy **ending**.	✓	✓
Writing is split into paragraphs for the different sections.	•	✓
Speech between characters which is punctuated with inverted commas.	•	○

Capital Letters	✓	Full stops	✓	! and/or ?	○	' (apostrophe)	✓
, (comma)	○	" "	○	Makes sense	✓	Neat Handwriting	✓

Mostly

Mostly

Teacher's Comment

A very good effort hp. I've had to circle some commas. Can you explain why they shouldn't have been used where you put them?

My Comment

Because there is "and" after that word.

Appendix II:

Adapted self-efficacy questionnaire proforma

Self-Efficacy Questionnaire

	Strongly Agree	Agree	Disagree	Strongly Disagree	Comments?
1. I am able to get teachers to help me when I am stuck.					
2. I am able to study when there are other interesting things going on.					
3. I am able to revise for tests.					
4. I complete all my homework every day on time.					
5. I can focus and pay attention during lessons.					
6. I am able to understand the subjects I study at school.					
7. I can generally accurately predict how well I have done on a test.					
8. My parents/guardians are satisfied with how much studying I do.					
9. I am good at Purple Pen self assessment/peer assessment in lessons.					
10. I can express my thoughts and feelings successfully when other people disagree with me.					

Appendix III:

Trace observation proforma

Trace Observation Record

Indicative behaviours: Skimming and scanning to different parts of the text Underlining Highlighting or annotating key passages Noting down questions Looking ahead to questions and rereading
Observations

Appendix IV:
Adapted Index of Reading Awareness Pre and Post-Test (including scores)

Index of Reading Awareness (pre and post-test)

Evaluating

1. What is significant about the first sentence or two in a text?
a) They often foreshadow the rest of the text (2)
b) They are always the most interesting (0)
c) They set the scene (1)

2. Why are the last sentences in a text significant?
a) They tell you what happened (2)
b) They are interesting (1)
c) They are harder to read (0)

3. How can you tell which the most significant sentences in the text are?
a) They tell you the most about characters and what happens (2)
b) They are the most interesting (1)
c) All of them are important (0)

Planning

4. If you are short on time and can only read some sentences, what do you read?
a) The ones in the middle (0)
b) Scan and read the ones with the most information (2)
c) The ones which are the most interesting (1)

5. If a teacher told you to remember the general meaning, what would you do?
a) Skim through what is said and find out what it means (2)
b) Read the text and try to remember it (1)
c) Recount the events (0)

6. Before you start reading the text, what do you do to help you read better?
a) Just start reading to save time (0)
b)Think about why you are reading (2)
c) Have a highlighter ready (1)

7. If you have to read quickly, what do you do?
a) Read new vocabulary as these are important (1)
b) Read the words you know and can pronounce (0)
c) Read the words which tell you the most about the text (2)

Regulation

8. Why do you go back and read things again?
a) It is good practice (1)
b) You didn't understand it (2)
c) You forgot some of the words (0)

9. If you come up against a word you don't know, what do you do?
a) Use the words around it to figure it out (2)
b) Ask someone else (1)
c) Go on to the next sentence (0)

10) What parts of the text do you skip?
a) The parts which are difficult to understand (1)
b) The parts which are not important and don't mean anything for the text (2)
c) I don't skip any parts (0)

Conditional Knowledge (reaction)

11) I read best when…
a) There is extra information to help me to figure out the meaning e.g. pictures, background info (2)
b) I picture the events in my mind (2)
c) I read quickly (0)

12) When I am reading as part of a test I…
a) Ask myself questions about important ideas (2)
b) Concentrate hard and try to remember things (1)
c) Skip parts I don't understand to save time and focus on what I know (0)

13) When I am reading to revise for a test I…
a) Read the information over and over (0)
b) Talk about it to someone else to check I understand it (2)
c) Write the important parts down in my own words (2)

Appendix V:
Semi-structured interview questions

Q1 What have you learned in the Intervention Lessons?

Q2 Which strategies did you use in the mock exams?

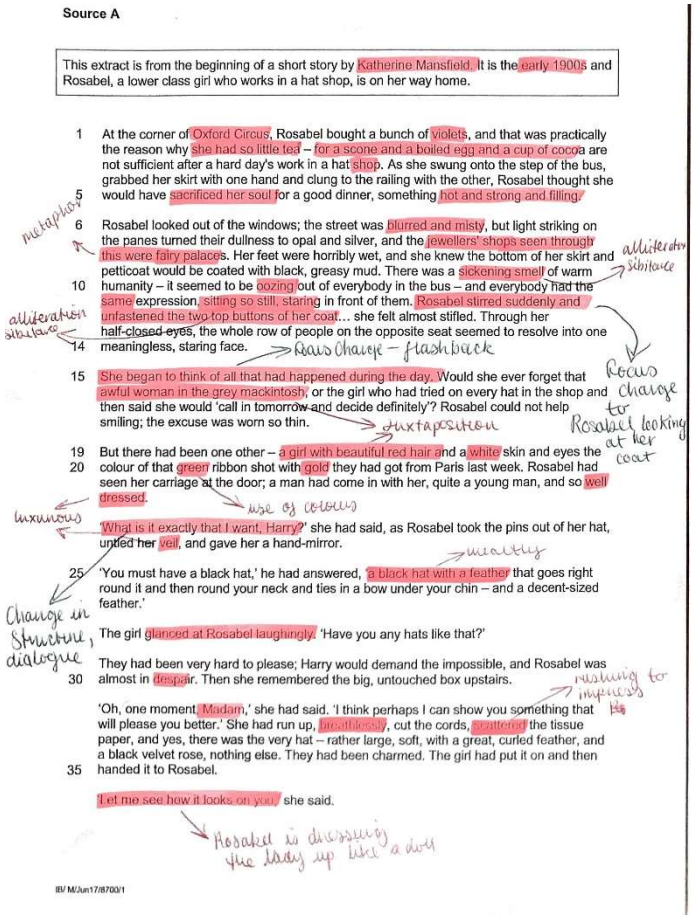
Q3 Have you used these in any other subjects?

Q4 What did you think of the lessons?

Appendix VI:

Comparison between annotations made during trace observation -

i. Extracts collected from the girls' group after the pre-test trace observation.



Source A

This extract is from the beginning of a short story by Katherine Mansfield. It is the early 1900s and Rosabel, a lower class girl who works in a hat shop, is on her way home.

At the corner of Oxford Circus, Rosabel bought a bunch of violets, and that was practically the reason why she had so little tea – for a scone and a boiled egg and a cup of cocoa are not sufficient after a hard day's work in a hat shop. As she swung onto the step of the bus, grabbed her skirt with one hand and clung to the railing with the other, Rosabel thought she would have sacrificed her soul for a good dinner, something hot and strong and filling.

Rosabel looked out of the windows; the street was blurred and misty, but light striking on the panes turned their dullness to opal and silver, and the jewellers' shops seen through this were fairy palaces. Her feet were horribly wet, and she knew the bottom of her skirt and petticoat would be coated with black, greasy mud. There was a sickening smell of warm humanity – it seemed to be oozing out of everybody in the bus – and everybody had the same expression, sitting so still, staring in front of them. Rosabel stirred suddenly and unfastened the two top buttons of her coat… she felt almost stifled. Through her half-closed eyes, the whole row of people on the opposite seat seemed to resolve into one meaningless, staring face.

She began to think of all that had happened during the day. Would she ever forget that awful woman in the grey mackintosh, or the girl who had tried on every hat in the shop and then said she would 'call in tomorrow and decide definitely'? Rosabel could not help smiling; the excuse was worn so thin.

But there had been one other – a girl with beautiful red hair and a white skin and eyes the colour of that green ribbon shot with gold they had got from Paris last week. Rosabel had seen her carriage at the door; a man had come in with her, quite a young man, and so well dressed.

'What is it exactly that I want, Harry?' she had said, as Rosabel took the pins out of her hat, untied her veil, and gave her a hand-mirror.

'You must have a black hat,' he had answered, 'a black hat with a feather that goes right round it and then round your neck and ties in a bow under your chin – and a decent-sized feather.'

The girl glanced at Rosabel laughingly. 'Have you any hats like that?'

They had been very hard to please; Harry would demand the impossible, and Rosabel was almost in despair. Then she remembered the big, untouched box upstairs.

'Oh, one moment, Madam,' she had said. 'I think perhaps I can show you something that will please you better.' She had run up, breathlessly, cut the cords, scattered the tissue paper, and yes, there was the very hat – rather large, soft, with a great, curled feather, and a black velvet rose, nothing else. They had been charmed. The girl had put it on and then handed it to Rosabel.

'Let me see how it looks on you,' she said.

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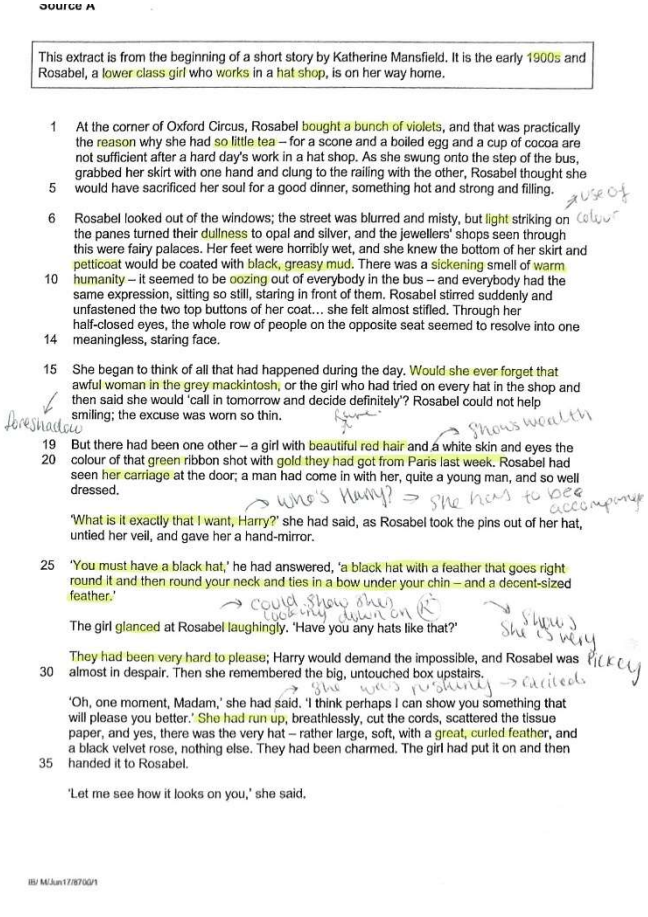

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'What is it exactly that I want, Harry?' she had said, as Rosabel took the pins out of her hat, untied her veil, and gave her a hand-mirror.

'You must have a black hat,' he had answered, 'a black hat with a feather that goes right round it and then round your neck and ties in a bow under your chin – and a decent-sized feather.'

The girl glanced at Rosabel laughingly. 'Have you any hats like that?'

They had been very hard to please; Harry would demand the impossible, and Rosabel was almost in despair. Then she remembered the big, untouched box upstairs.

'Oh, one moment, Madam,' she had said. 'I think perhaps I can show you something that will please you better.' She had run up, breathlessly, cut the cords, scattered the tissue paper, and yes, there was the very hat – rather large, soft, with a great, curled feather, and a black velvet rose, nothing else. They had been charmed. The girl had put it on and then handed it to Rosabel.

'Let me see how it looks on you,' she said.

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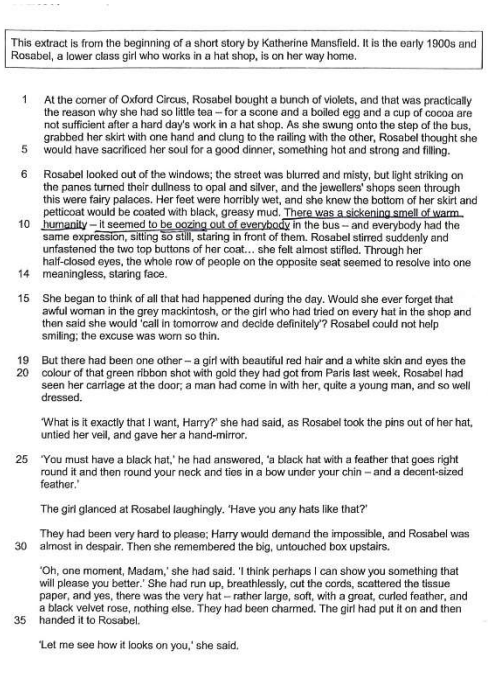
ii. Extracts collected from the boys' group after the pre-test trace observation -



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She began to think of all that had happened during the day. Would she ever forget that awful woman in the grey mackintosh, or the girl who had tried on every hat in the shop and then said she would 'call in tomorrow and decide definitely'? Rosabel could not help smiling; the excuse was worn so thin.

But there had been one other – a girl with beautiful red hair and a white skin and eyes the colour of that green ribbon shot with gold they had got from Paris last week. Rosabel had seen her carriage at the door; a man had come in with her, quite a young man, and so well dressed.

'What is it exactly that I want, Harry?' she had said, as Rosabel took the pins out of her hat, untied her veil, and gave her a hand-mirror.

'You must have a black hat,' he had answered, 'a black hat with a feather that goes right round it and then round your neck and ties in a bow under your chin – and a decent-sized feather.'

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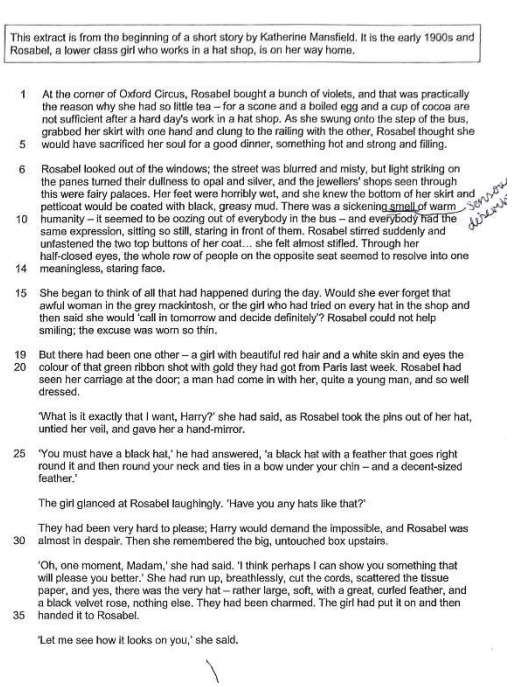

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'What is it exactly that I want, Harry?' she had said, as Rosabel took the pins out of her hat, untied her veil, and gave her a hand-mirror.

'You must have a black hat,' he had answered, 'a black hat with a feather that goes right round it and then round your neck and ties in a bow under your chin – and a decent-sized feather.'

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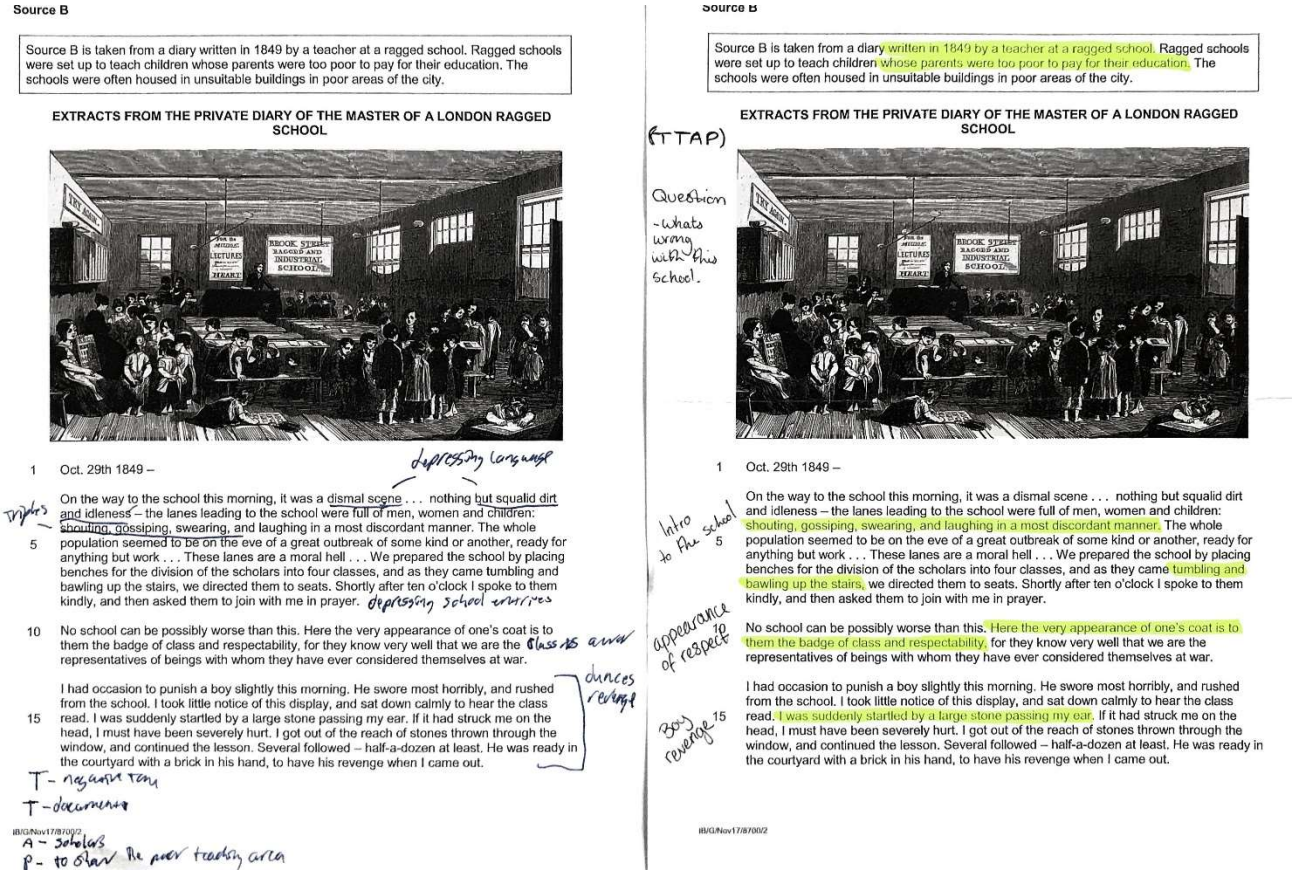
Appendix VII:

Improved annotations and use of metacognitive strategies demonstrated during post-test trace observation with boys' group –



Source B

Source B is taken from a diary written in 1849 by a teacher at a ragged school. Ragged schools were set up to teach children whose parents were too poor to pay for their education. The schools were often housed in unsuitable buildings in poor areas of the city.

EXTRACTS FROM THE PRIVATE DIARY OF THE MASTER OF A LONDON RAGGED SCHOOL

1 Oct. 29th 1849 –

On the way to the school this morning, it was a dismal scene . . . nothing but squalid dirt and idleness – the lanes leading to the school were full of men, women and children: shouting, gossiping, swearing, and laughing in a most discordant manner. The whole population seemed to be on the eve of a great outbreak of some kind or another, ready for anything but work . . . These lanes are a moral hell . . . We prepared the school by placing benches for the division of the scholars into four classes, and as they came tumbling and bawling up the stairs, we directed them to seats. Shortly after ten o'clock I spoke to them kindly, and then asked them to join with me in prayer.

No school can be possibly worse than this. Here the very appearance of one's coat is to them the badge of class and respectability, for they know very well that we are the representatives of beings with whom they have ever considered themselves at war.

I had occasion to punish a boy slightly this morning. He swore most horribly, and rushed from the school. I took little notice of this display, and sat down calmly to hear the class read. I was suddenly startled by a large stone passing my ear. If it had struck me on the head, I must have been severely hurt. I got out of the reach of stones thrown through the window, and continued the lesson. Several followed – half-a-dozen at least. He was ready in the courtyard with a brick in his hand, to have his revenge when I came out.

IB/G/Nov17/8700/2

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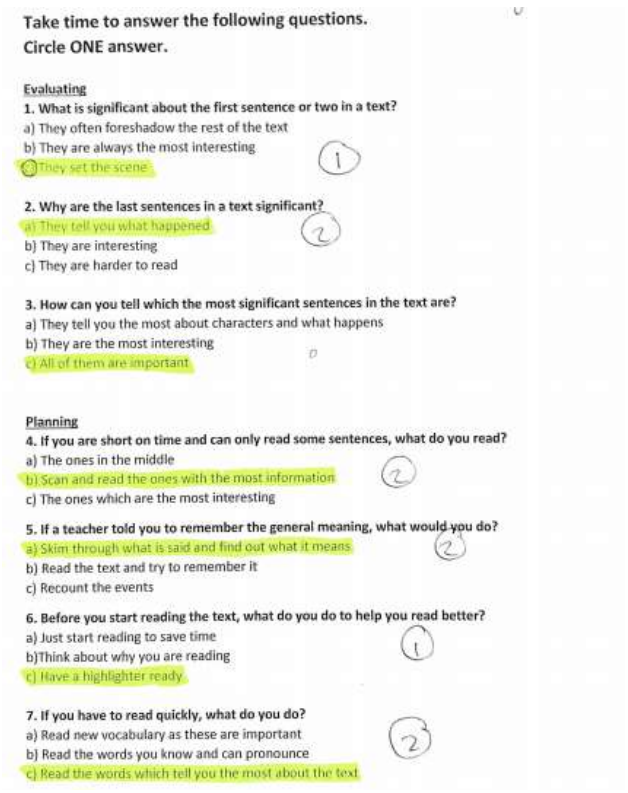
Appendix VIII:

Sample of completed Index of Reading Awareness (IRA) –



Take time to answer the following questions.
Circle ONE answer.

Evaluating

1. What is significant about the first sentence or two in a text?
a) They often foreshadow the rest of the text
b) They are always the most interesting
c) They set the scene

2. Why are the last sentences in a text significant?
a) They tell you what happened
b) They are interesting
c) They are harder to read

3. How can you tell which the most significant sentences in the text are?
a) They tell you the most about characters and what happens
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c) All of them are important

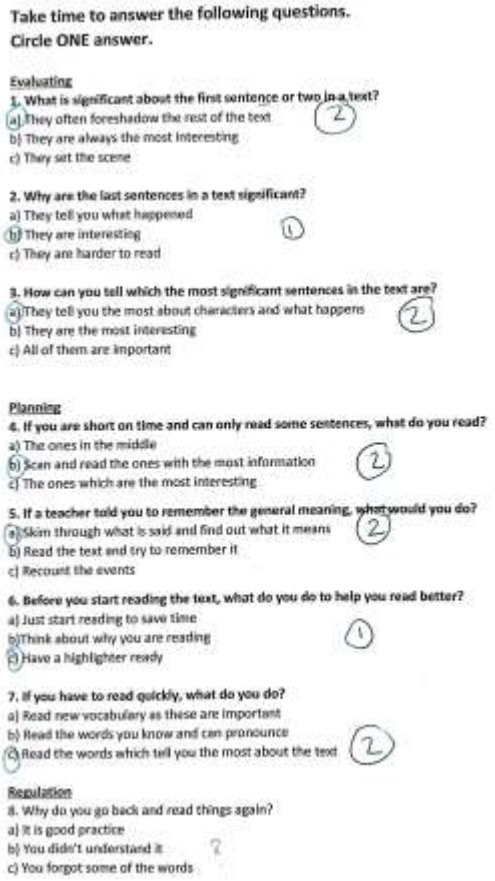
Planning

4. If you are short on time and can only read some sentences, what do you read?
a) The ones in the middle
b) Scan and read the ones with the most information
c) The ones which are the most interesting

5. If a teacher told you to remember the general meaning, what would you do?
a) Skim through what is said and find out what it means
b) Read the text and try to remember it
c) Recount the events

6. Before you start reading the text, what do you do to help you read better?
a) Just start reading to save time
b) Think about why you are reading
c) Have a highlighter ready

7. If you have to read quickly, what do you do?
a) Read new vocabulary as these are important
b) Read the words you know and can pronounce
c) Read the words which tell you the most about the text



Take time to answer the following questions.
Circle ONE answer.

Evaluating

1. What is significant about the first sentence or two in a text?
a) They often foreshadow the rest of the text
b) They are always the most interesting
c) They set the scene

2. Why are the last sentences in a text significant?
a) They tell you what happened
b) They are interesting
c) They are harder to read

3. How can you tell which the most significant sentences in the text are?
a) They tell you the most about characters and what happens
b) They are the most interesting
c) All of them are important

Planning

4. If you are short on time and can only read some sentences, what do you read?
a) The ones in the middle
b) Scan and read the ones with the most information
c) The ones which are the most interesting

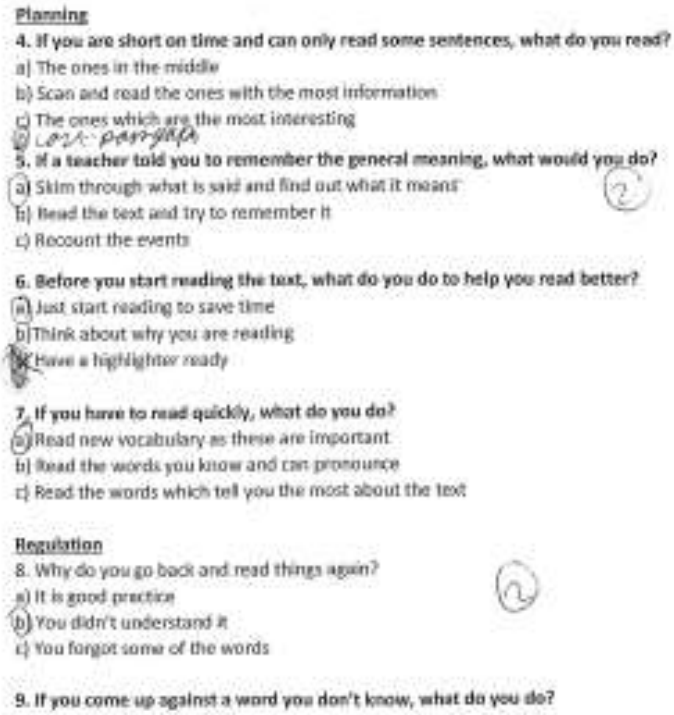
5. If a teacher told you to remember the general meaning, what would you do?
a) Skim through what is said and find out what it means
b) Read the text and try to remember it
c) Recount the events

6. Before you start reading the text, what do you do to help you read better?
a) Just start reading to save time
b) Think about why you are reading
c) Have a highlighter ready

7. If you have to read quickly, what do you do?
a) Read new vocabulary as these are important
b) Read the words you know and can pronounce
c) Read the words which tell you the most about the text

Regulation

8. Why do you go back and read things again?
a) It is good practice
b) You didn't understand it
c) You forgot some of the words



Planning

4. If you are short on time and can only read some sentences, what do you read?
a) The ones in the middle
b) Scan and read the ones with the most information
c) The ones which are the most interesting
2 one paragraph

5. If a teacher told you to remember the general meaning, what would you do?
a) Skim through what is said and find out what it means
b) Read the text and try to remember it
c) Recount the events

6. Before you start reading the text, what do you do to help you read better?
a) Just start reading to save time
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Regulation

8. Why do you go back and read things again?
a) It is good practice
b) You didn't understand it
c) You forgot some of the words

9. If you come up against a word you don't know, what do you do?

Appendix IX:

Sample of completed Self-efficacy questionnaires -

Self-Efficacy Questionnaire

	Strongly Agree	Agree	Disagree	Strongly Disagree	Comments?
1. I am able to get teachers to help me when I am stuck.			✓		
2. I am able to study when there are other interesting things going on.			✓		
3. I am able to revise for tests.				✓	
4. I complete all my homework every day on time.		✓			
5. I can focus and pay attention during lessons.		✓			
6. I am able to understand the subjects I study at school.		✓			
7. I can generally accurately predict how well I have done on a test.		✓			
8. My parents/guardians are satisfied with how much studying I do.			✓		
9. I am good at Purple Pen self assessment/peer assessment in lessons.			✓		
10. I can express my thoughts and feelings successfully when other people disagree with me.		✓			

Self-Efficacy Questionnaire

	Strongly Agree	Agree	Disagree	Strongly Disagree	Comments?
1. I am able to get teachers to help me when I am stuck.		✓			Some of the times. It depends on the teacher.
2. I am able to study when there are other interesting things going on.			✓		
3. I am able to revise for tests.			✓		
4. I complete all my homework every day on time.			✓		
5. I can focus and pay attention during lessons.		✓			
6. I am able to understand the subjects I study at school.			✓		
7. I can generally accurately predict how well I have done on a test.				✓	
8. My parents/guardians are satisfied with how much studying I do.		✓			
9. I am good at Purple Pen self assessment/peer assessment in lessons.		✓			
10. I can express my thoughts and feelings successfully when other people disagree with me.	✓				

Appendix X:
Completed trace observation record (typed from notes to ensure anonymity) –

Trace Observation Record

Indicative behaviours:
Skimming and scanning to different parts of the text
Underlining
Highlighting or annotating key passages
Noting down questions
Looking ahead to questions and rereading

Observations
Pre-test 10/01/18
- 3:20 Pupil 1 using pen to stay on the same line
- Pupil 2 underlines. Using finger to follow line along.
- Disruption already, pupil 3 head down on desk.
- 3:22 All but three pupils no longer concentrating on the extract. Pupil 2 now tearing corner off the extract
- Pupil 4 labels a simile.
- Pupil 5 and 6 have turned page. Pupil 5 no longer reading.
- Pupil 2 and 3 now talking to each other
- Pupil 3 scribbles on pupil 2's extract
- 3:27 All pupils now off task and talking. Some pupils have only read side one of extract (Pupil 9)
- Pupil 8 silently staring down, no comments or annotations
- 3:30, Pupil 2 and 3 now both slumped over, head on desk.
- Remaining pupils are unfocused and distracted
- Pupils requesting to know how much time is left.
- Some pupils frustrated.
- Pupil 9 beginning to read again.

Appendix XI:

Sample of slides from intervention lessons –



