METACOGNITION IN WRITING INSTRUCTION: 
HOW EDUCATORS PERCEIVE STRATEGY SUPPORT FOR STUDENTS WITH 
LANGUAGE-BASED LEARNING DISABILITIES

A thesis presented 
by 

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to 
The School of Education

In partial fulfillment of the requirements for the degree of 
Doctor of Education 

in the field of 

Education

College of Professional Studies 
Northeastern University 
Boston, Massachusetts 
June 2019
Abstract

Students with language-based learning disabilities (LBLD) present with language problems that impact every aspect of learning and communication in a time when people are reading and writing more than any other time in history. Secondary educators in today’s public schools face the challenge of incorporating practices that build metacognitive awareness and literacy in students with LBLD so they can become effective writers and communicators. There is a shortage of research that seeks to understand the impact of teaching writing through metacognition and self-regulation to students with LBLD in public high schools. In better understanding the experience of high school teachers working within Language-Based Learning (LBL) programs, Massachusetts public schools can more effectively acknowledge and therefore address the needs of students with LBLD. Utilizing Interpretative Phenomenological Analysis methodology through the theoretical lens of Borkowski’s process-oriented model of metacognition (2000), this study provided insight into how teachers make sense of their experience in educating LBLD students with regard to building metacognition and self-regulation to access the writing process. Data analysis of interview transcripts revealed four emergent themes including Student Perception, Building Metacognition through Explicit Instruction, Language-Based Instructional Methodologies, and Essential Components of LBL Classrooms. Evident in the study is the inconsistency of access to LBL programs across Massachusetts public schools. Implications for future study include understanding the effects of strategy instruction and writing practices among high school students with LBLD. Recommendations for practice include implementing consistent strategies across all content areas, more cohesive training to raise awareness of the needs of students with LBLD, and greater outreach for school systems to understand both diagnostic criteria and how to address the needs of students with LBLD to improve literacy.

Keywords: language-based learning disability, metacognition, self-regulation, self-regulatory learning practices, and interpretative phenomenological analysis
Acknowledgements

First and foremost, I would like to thank the love of my life and soon to be husband, Jim, for your unwavering support, kindness, and love throughout this entire process. You spent many nights in the basement to give me the quiet space I needed to work, took on additional roles in the household, and always offered an ear (or two) to listen. Not once did you complain, and you were always a shot of reality and humor when I needed it most. I could not have done this without you, and I am so grateful to have you in my life.

I would also like to thank my family—mom, dad, and Paul—for your positivity, and for teaching me the value of hard work, grit, and education. I truly would not have made it to this point without your influence. To the family I am (very luckily) marrying into—Eileen, Catherine, Jon, and David James—it is a blessing to have you in my life. Thank you for all the support, laughter, and joy you bring.

I would like to acknowledge my editor Leslie Wirpsa, who passed during this process. I know you are seeing this from Heaven. Thank you for sharing the same excitement as me over the metacognitive process, and for giving me encouraging words of life advice that still linger in my mind today. To Tom Mowle, thank you for stepping in and offering as much support as Leslie. Thank you to my EdD Google chat support group for your comradery and motivation.

To my advisor, Carol Young, I cannot thank you enough for your encouraging approach to this entire process. You were able to probe me to think differently about my views of education and were always available to answer my many emails and calls. To the rest of my dissertation committee, Dr. Billye Sankofa Waters and Dr. Bonnie Ream, your insight and guidance are so very appreciated. And finally, to all my Northeastern professors and peers, thank you for pushing me to go beyond what I thought I was capable of.
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Chapter One: Introduction to the Study

Students with Language-Based Learning Disabilities (LBLD) present with average to above average intelligence, verbal comprehension, and perceptual reasoning abilities but need specialized instruction due to below-average expressive language skills, working memory, processing speed, decoding/fluency skills, executive functioning difficulties, and/or ADHD (Artelt & Schneider, 2015; Harrison, Goegan, Jalbert, McManus, Sinclair, & Spurling, 2016; Negretti, 2012; Troia, 2014; Wallach, Charlton, & Bartholomew, 2014; Westby, 2014). Compared to ‘non-disabled’ peers, special education students experience “higher dropout rates, low graduation rates, more time to finish school” as well as “underemployment or unemployment and higher rates of incarceration in special education students” (Connor & Gabel, 2013, p. 101). Learners with comorbid conditions (coexisting learning disabilities such as written expression, reading, ADHD, etc.) also “exhibit poorer outcomes across a number of domains, including academic success, social skills, and occupational outcome in adulthood” (Parke, Thaler, Etcoff, & Allen, 2015, p. 1). Students with LBLD are special education students who are part of this statistic. As a result, some public school districts are responding to this need and creating substantially separate Language-Based Learning (LBL) Programs that cater to the needs of LBLD students.

The purpose of this qualitative Interpretative Phenomenological study is to understand the experience of teachers serving a population of high school students who present with LBLD in substantially separate public high school programs. These experiences involve how teachers perceive the way their students develop language skills, learn, and express themselves through language and writing to negotiate the world given their learning differences. At this stage in the research, metacognition and self-regulation serve as the vehicles for learning how to write. They
are defined as the way students think about their thinking (metacognition) and regulate their responses (self-regulation) to communicate clearly and navigate complex cognitive tasks such as the writing process.

Knowledge generated from the research is expected to inform the teaching practices and perceptions of educators who incorporate metacognitive teaching practices into their language-based writing curriculum. There is a conflict between metacognition, which is what students are supposed to use in order to anticipate how they communicate and write, and self-regulation, which is how students use strategies to make sense of their writing and evaluate their learning. This is because self-regulation competes with the executive function skills and language necessary to navigate tasks, which are both significant weaknesses for the LBLD learner. The purpose of this research is to understand how metacognitive and self-regulatory teaching practices enhance writing abilities among students with LBLD to encourage independence and communication skills that are necessary for academic success but also necessary to self-expression that transcends the classroom learning environment.

This thesis will be arranged in five chapters. The first chapter will begin with a statement of the problem regarding the need for metacognitive and self-regulatory teaching practices for students who present with LBLD, as well as perceived levels of student understanding according to educators responsible for student growth. Following the significance statement, there will be a discussion of how this study will benefit families, educators, administrators, policymakers, and future employers. Finally, Borkowski’s process-oriented model of metacognition (2000), which serves as the theoretical framework for this study, will be introduced and explained.
Statement of the Problem

The “Language Learning Disabled Movement” of the 1970s and 1980s called to attention the connection between language disabilities and learning disabilities for the first time, highlighting a necessity for change in the approach to education for children who were entering school with disabilities in both areas (Wallach, 2005). Prior to this time, there was a notion that educators did not know what to do with these unique learners, and children were labeled as “perceptually handicapped” with “minimal brain dysfunction” up until relatively recent times (Wallach, 2005, p. 293). It was also believed that acquiring literacy proficiency was considered “primarily a visual process” up until the 1970s (Ehren, Ben-Hanania Lenz, & Deshler, 2014, p. 630).

The culture of education has changed since the 1970s, and regardless of assessment battery results, students must receive an education that allows them to make effective progress and values their ability to be higher than “perceptually handicapped.” Due to federal incentives such as No Child Left Behind and civil rights laws such as the Individuals with Disabilities Education Act, there is a legal and incentivized responsibility for schools to cater to the learning needs of students with LBLD; this has sparked the creation of substantially separate programs that deliver multisensory instruction in small-group formats to students who present with similar LBLD profiles. Offering special education supports within the public school setting promotes this mandated inclusion while catering to the specific needs of LBLD learners.

Students must possess a sense of metacognition in order to independently monitor levels of understanding and effectiveness in writing and communication. However, students with LBLD demonstrate difficulty applying metacognition to learning due to difficulties retrieving language to describe and self-monitor the process. If students with LBLD are given Self-
Regulatory Learning (SRL) strategies through explicit instruction, then there will be a greater understanding of the language support necessary to apply metacognitive thinking processes to communicating ideas and writing. Unless the education paradigm is altered to teach students how to independently monitor their individual levels of understanding through self-regulatory strategies that enhance metacognition, we will continue to graduate special education students who do not achieve at the same level of independence as “non-disabled” peers.

Even with specialized services and Individualized Education Plans (IEPs), special education students taking the ELA Massachusetts Comprehensive Assessment System (MCAS) exam (which involves writing) are six times as likely to fail compared to peers without learning disabilities (Baron, 2006). In 2015, 2% of nondisabled students failed their ELA MCAS exam, compared to 16% of students who present with disabilities (Massachusetts Department of Elementary and Secondary Education, 2015). One of the most essential skills that stretches across all testing subject matter is the ability to communicate a sense of understanding and enhanced comprehension through writing; given the language deficiencies of LBLD students, acquisition of this skill is essential to academic success and increased levels of independence.

Previous research suggests that there is a correlation between strong metacognitive awareness and effective writing and communication skills in students because they are able to independently monitor their level of understanding throughout the writing process. Metacognitive awareness allows students to set goals, plan, monitor effective strategies and adapt as necessary; metacognitive practices and self-regulation strategies allow students to “make sense of information” without a need for prompting or structure, which is essential to building independence (Roberts, Scammacca, Osman, Hall, Mohammed, & Vaughn, 2014, p. 454).
Minimal research attention has been directed toward the correlation between the practices of metacognition and self-regulatory learning with increased independent writing abilities among students with LBLD, specifically (Rouhani, Nafchi, & Ziaee, 2016). Effectiveness of these SRL strategies was generalized among students with disabilities (Rouhani, et al., 2016). Furthermore, there is a deficit in the research regarding the effect of teachers implementing writing interventions involving self-regulation in both the substantially separate and the general education setting (Cook & Bennett, 2014). This is supported by the notion that there is limited knowledge about the effective employment of SRL practices in the teaching process (Spruce & Bol, 2013).

Finally, secondary educators do not typically learn how to teach reading, writing, listening, and speaking in their teacher education programs and “they often do not see the connection between subject-area achievement and the literacy access skills and strategies to promote content mastery” (Ehren et al., 2014, p. 631). Collaboration with special education staff who are experts in literacy (e.g. speech-language pathologists or reading specialists) could enhance this understanding and help LBLD students learn (Ehren et al., 2014). However, this typically does not happen because there is more emphasis on teaching content knowledge than giving students strategies for learning and literacy in general education classes (Ehren et al., 2014; Joseph, 2010). As a result, some districts will create substantially separate language-based learning (LBL) programs where students with LBLD can have access to special education staff who possess the expertise to incorporate practices for metacognition, literacy, and learning strategies. Additionally, staff within these programs are given the flexibility to embed these practices into the curriculum because these skills are embedded in the IEP and are therefore a
legally required component of a student’s learning experience. However, these programs are not part of most Massachusetts public high schools.

By examining teaching methodologies using qualitative approaches to determine how much emphasis is placed on metacognition and, inherently, literacy, we can better understand whether explicit instruction that is tailored to understanding one’s individualized learning process is effective in improving the independent writing skills necessary for students with LBLD to succeed academically and communicate clearly. Improving educational practices to promote independent learning through writing and metacognition will benefit LBLD learners, causing a ripple effect in positive outcomes for families, educators, administrators, policymakers, and future employers. Therefore, this study seeks to understand how educators make sense of metacognitive and self-regulatory teaching practices to enhance writing abilities among students with LBLD to encourage the independence and self-expression necessary to navigate the world both during and beyond schooling years.

**Significance of the Research Question**

Students who present with LBLD need to know how to apply SRL strategies through the writing process because writing is a tool that improves critical thinking skills, analysis and inference skills, and the ability to communicate unique ideas that are essential in academia, the workplace, and society (Quitadamo & Kurtz, 2007; Westby, 2014). However, the metacognitive ability to “make sense of information” without prompting or structure is not automatic in LBLD learners (Roberts et al., 2014, p. 454). That is, writing and comprehension skills are bridged with metacognition and self-regulation through the use of language, and all abilities in literacy and understanding are impacted to a certain extent as a result of the LBLD.
SRL is necessary for students with LBLD because it combines metacognition and self-regulation to monitor the writing process in a concrete manner and addresses “the interaction of cognitive, motivational, and contextual factors rather than their isolated contributions” (Westby, 2014, p. 394). The intention is to combine skills necessary for independence through the application of learned strategies that are appropriate for the classroom setting in order to improve independent writing abilities (Boyle, Rosen, & Forchelli, 2016; Dinsmore & Loughlin, 2008). In this sense, self-regulation is effective when students learn to achieve both correct and habitual use of strategies that are applied appropriately to definitive tasks that warrant understanding through the writing process (Artelt & Schneider, 2015).

**Research Problem and Research Question**

The purpose of this study is to understand the experiences of Massachusetts high school teachers in Language-Based Learning (LBL) Programs with regard to how they perceive metacognitive and self-regulatory instruction; the research also seeks to understand how they make sense of those experiences as it relates to supporting the writing skills of their students with LBL disabilities. This research hopes to answer the following question:

- What are the experiences of Massachusetts high school teachers in Language-Based Learning (LBL) Programs with metacognitive and self-regulatory instructional strategies?

**Definition of Key Terminology**

**Language-Based Learning Disability (LBLD)**- Students who present with average to above average intelligence; below average reading, writing, spelling, processing speed, working memory, decoding/encoding abilities, and/or expressive language skills.

**Metacognition**- The process of thinking about one’s thinking to monitor learning, organize thoughts, and revise approaches to a task for accuracy.
**Self-regulation**- The ability to apply strategies necessary to plan, set goals, self-monitor, and evaluate learning to enhance metacognition.

**Self-regulated learning (SRL)**- Strategies and practices that combine metacognition and self-regulation to concretely monitor complex cognitive tasks.

The following section of this chapter will include a description and discussion of Borkowski’s process-oriented model of metacognition (2000), which will serve as a theoretical lens for this study.

**Theoretical Framework**

Borkowski’s process-oriented model of metacognition (2000) will serve as the theoretical framework for this study. According to Borkowski’s theoretical framework, strategy-based learning and instruction produce higher performance levels compared to nonstrategic methods because they enhance the development of metacognition; students learn to employ strategies that help them to consciously carry out cognitive operations for effective and meaningful learning (Borkowski, Chan, & Muthukrishna, 2000). Through the use of strategy instruction, Borkowski placed executive function and motivation at the heart of his theory for metacognition (Borkowski, 1992; Borkowski et al., 2000; Jacobson, Mulick, & Rojahn, 2007; Pressley, Gaskins, Cunicelli, Burdick, Schau-Matt, Lee, & Powell, 1991; Railean, Etcı, & Elci, 2016). Borkowski argued that students who are given explicit strategy instruction demonstrate improved metacognition, which in turn gives children an opportunity to acquire more knowledge and problem-solve with greater levels of success (Akturk & Sahin, 2011; Borkowski, 1992; Pressley et al., 1991).

The idea behind metacognition in this theory is that learned strategies will eventually become transferable and generalizable so long as strategy instruction is meaningful and
interesting; in this sense, students will be given opportunities to develop the confidence necessary for motivation, self-efficacy, and goal-setting (Borkowski, 1992; Borkowski et al., 2000; Jacobson et al., 2007). Borkowski, like many researchers, argued that metacognition can be developed and reshaped through effective classroom instruction and learning experiences in the home over a long period of time; he is unique, however, in that he based this argument off the effectiveness of strategy instruction among students with learning disabilities (Borkowski et al., 2000). For this reason, Borkowski’s theory engenders critical change in meeting the needs of this specific population of students.

Metacognition is rooted in cognitive and social development psychology, originally explored through the lens of human judgement, knowing and thinking about knowledge and thoughts, and control of consciousness (Akturk & Sahin, 2011). In 1976, the concept of metacognition and metamemory was named by developmental psychologist John Flavell, who wanted to understand how people improve upon their learning and decision-making by compartmentalizing metacognition according to person, task, and strategy (Akturk & Sahin, 2011; Borkowski, 2000; Martin, 2013; Paris & Winograd, 1990). A second stage evolved that sought to connect memory performance with memory knowledge, also known as metamemory, which elicited findings about metacognition that have been deemed “fuzzy” because: 1) metacognition has many open-ended definitions; 2) it is difficult to measure metacognition because it is an internal process, and people are not always aware of the complexity of their thoughts and/or they are unable to explain their thinking; 3) it is impossible to separate the processes involved with metacognition (Borkowski, Peck, Reid, & Kurtz, 1983; Borkowski et al., 2000; Paris, 1990). Working from Flavell’s foundation for metacognition, another prominent researcher, Brown, looked towards the executive cognition that controlled these thought
processes (Borkowski et al., 2000; Martin, 2013; Paris, 1990). Associations with executive functions lead to motivational variables introduced by Borkowski, which were not originally included in Flavell’s foundational model of metacognition (Borkowski et al., 2000).

**Limitations and Criticism**

Self-regulation, the basis of Borkowski’s model, is a central component that defines learning disabilities in students (Jacobson et al., 2007). One major criticism states the employment of self-regulation strategies is not effective in students who may not fully access the metacognitive process as a result of the learning disability. While students with LBLD present with biological deficits that hinder executive functions (i.e. ADHD, below-average working memory), giving them strategies that are applied in context and practiced across a variety of mediums offers greater benefit to students than telling children they are right or wrong without offering the skills necessary to learn how to self-correct (Borkowski et al., 2000). When students with LBLD continually fail despite increased effort, they do not always know how to try harder (Borkowski et al., 2000). Such experiences reinforce negative self-perception of ability and enhance feelings of helplessness (Borkowski et al., 2000). Thus, Borkowski’s (2000) model is still viable.

There have also been arguments against the effectiveness of strategies in learning. Many educational researchers believe that “strategy instruction produces only superficial effects” (Pressley et al., 1991, p. 46). Critics argue that while students might employ learned strategies, the depth of employment necessary to develop higher-level thinking, or how much a student internalizes and uses a strategy, does not go beyond what is instructed and scaffolded (or prompted) in the classroom. This was disagreed upon by educators participating in the study who generated such opinions, however. (Pressley et al., 1991). This is because self-regulation is only
effective when students learn to achieve both correct and habitual use of strategies that are applied appropriately to definitive tasks that warrant understanding through the writing process (Artelt & Schneider, 2015). However, Borkowski’s theoretical model offers support that calls upon the utilization of strategies across a variety of contexts and mediums according to a method that is meaningful and purposeful to students. In this sense, the model necessitates in-depth learning as an essential component to enhanced metacognition. However, the feasibility of consistent instruction across the curriculum may prove challenging in authentic educational environments. While students with LBLD may need more time and instruction compared to non-disabled peers, studies have shown that this instruction has proven effective for increased metacognition according to Borkowski’s framework (Borkowski et al., 2000).

**Rationale**

Several prominent studies aligning with Borkowski’s framework serve as the basis for rationale. A study conducted by Postholm (2010) found that students who were given strategies to write a literary analysis in a social context were able to make improvements in their writing; their motivational needs were supported and they were given the individualized assistance necessary to fully understand why they were developing these strategies. Factors associated with motivation, meaningful strategy instruction tailored to the learner, and metacognitive teaching practices align with Borkowski’s model. A study conducted by Pressley et al. (1991) found instruction that employed explicit teaching methodologies, established specific foundational strategies, and guided students to use strategies that were relative to them enhanced self-regulation and overall student improvement. With several colleagues, Borkowski conducted a study working with children who were learning-disabled. Students who were taught according to his metacognitive model maintained strategy generalization three weeks after the study, and
students continued to independently use these strategies ten months later (Borkowski et al., 2000). A study conducted by Palladino, Poli, Masi, and Marcheschi (2001) found results that aligned with Borkowski’s model in that specific strategy knowledge correlated with self-monitoring and a positive response to learning, while attribution to external variables (such as luck or difficulty) decreased in students with learning disabilities. A review of the supporting literature strengthens Borkowski’s model, particularly as it relates to students with LD, seemingly because the motivational variables strengthen the desire to internalize strategies for enhanced learning experiences.

**Application of Theory to the Study**

As noted earlier, Borkowski’s process-oriented model of metacognition (2000) describes how explicit instruction, meaningful understanding of tailored strategy use, generalization, motivation, executive function, and self-efficacy can enhance metacognition in students with LBLD. Before outlining a framework for metacognitive learning, one must identify what it looks like to be a metacognitive learner as it relates to the model. Borkowski et al. (2000) first outlines the characteristics of a metacognitive learner as a basis for his framework. He then provides sequential and interdependent tenets for metacognition according to his framework. An explanation of a metacognitive learner, how this may be developed through Borkowski’s (2000) model, and an examination of each tenet is explored below.

**Foundational Characteristics for Each Tenet.** The tenets of the theory are based upon the Good Information Processing Model (Pressley et al., 1991). This model cites the following cognitive, motivational, personal, and situational characteristics as the foundational qualities of a metacognitive learner (Borkowski et al., 2000):
- Students develop a comprehensive understanding of how a strategy works in order to internalize and independently apply it across a variety of learning mediums.

- Students apply executive functioning skills to analyze, plan for, adjust, and reflect upon a chosen strategy that is beneficial to solving a problem or completing a task. This is also referred to as self-regulation.

- Children demonstrate motivation through hard work and use of self-regulation strategies in order to achieve a goal. This quality combines a belief in hard work with intrinsic motivation.

- Students develop purposeful goals that allow them to apply metacognitive strategies in order to persevere through difficult tasks. These goals are rooted in student visions of short-term and long-term goals, which fuel a student’s actions and perseverance.

- Students are historically supported by parents, schools, and society in order to promote consistency of strategy instruction and support for the development of metacognition.

**Explanation of the Model**

Borkowski’s process-oriented model of metacognition (2000) outlines seven tenets that build upon one another as a child develops a more sophisticated sense of metacognition through strategy instruction and meaningful, motivational learning practices (see Figure 1). These processes are reciprocal, and as a child acquires a heightened sense of metacognition, motivation, self-efficacy, and goal-setting abilities, the systems complement one another at increasingly sophisticated levels of cognitive thinking. According to the first tenet, specific strategy knowledge is first introduced, and repetition of this strategy is embedded in the learning process and tailored to the student’s learning profile. With explicit instruction and practice, students learn how effective the strategy may be, where and when it can be used, and how it may be used across a variety of mediums (Borkowski et al., 2000). The second tenet calls for specific strategy
knowledge to be applied to multiple contexts and, therefore, enlarged so children can learn how, when, and where it might be appropriate to utilize specific learning strategies (Borkowski et al., 2000). Writing is a skill that is applied across all content areas; understanding how or if a strategy is embedded across a variety of mediums will offer insight into how much consistency and access a student receives and, if so, how well a student internalizes a strategy beyond a content-specific classroom.

According to Borkowski’s third tenet, students begin to deploy self-regulation tasks, selecting strategies and monitoring performance that accompanies planned and deliberate thinking and learning. Students initially analyze a task in order to determine a strategy, but as students develop as metacognitive learners there is a shift; students fill in gaps in strategy use by monitoring their performance and revising their process for understanding in order to achieve a task. It is at this stage that students move beyond the employment of a strategy for basic problem-solving purposes to achieve higher-order executive thinking processes (Borkowski et al., 2000). There are two reasons why this tenet is necessary to develop this study. First, students with LBLD present with executive functioning difficulties, so it is important to understand how these biological factors influence self-regulation. Second, learning how the strategies taught in the classroom are absorbed by students will speak to the nature of instruction, the impact of relevance and understanding why a strategy is taught, and implications for increasingly independent learning abilities as a result.

The fourth stage states that students develop a sense of self-efficacy, recognizing the benefits of utilizing strategies for learning (Borkowski et al., 2000). Lessons in successful and unsuccessful outcomes are attributed to use of strategy and internal decisions rather than external factors such as luck or difficulty of a task (Borkowski et al., 2000). At this stage, students seek to
understand feedback as a tool for improving on future performances. It is here that cognitive acts are intertwined with motivational components to offer students a sense of control and energy to persevere through future learning tasks (Borkowski et al., 2000). Motivational factors encourage students with learning disabilities to apply strategies more than non-learning-disabled students, and may therefore be more effective. Understanding how the motivational components associated with strategy instruction may impact the value of strategy instruction is essential to measuring the impact of metacognition in learning.

The fifth stage, which occurs after successful employment of strategy use and heightened motivation, is at the core of Borkowski’s model because the self-efficacy students feel as a result of the successful employment of strategies allows them to enjoy learning (Borkowski et al., 2000). In most educational settings, students are not given opportunities to connect the reasons they learn with the self-regulatory strategies that help them achieve such success (Borkowski et al., 2000). By making this connection, students are empowered to take responsibility for task outcomes and use strategies as self-perceived capable learners. The research seeks to understand how certain teaching practices may enhance joyful learning, and how student responses may be perceived by educators.

The final tenet states students are able to set short- and long-term goals according to what they conceptualize as “hoped-for” and “feared” potential selves (Borkowski et al., 2000). Students possess short- and long-term goals to motivate them to be open to attempting new strategies for learning. While this tenet outlines the most sophisticated level of Borkowski’s theory and high school students may not necessarily present with sophisticated metacognition at this young age, it will be interesting to determine how goal-setting is impacted by the use of
strategies. The research seeks to understand how (or if) motivation comes as a result of confidence rooted in educational successes.

Borkowski’s sixth tenet states that students apply content-specific awareness to problem-solving situations, and can call upon metacognitive processes to utilize strategies as necessary (Borkowski et al., 2000). At this stage, however, strategies are not necessary. This tenet is not necessary to develop the study because the purposes of the research are to understand how strategies are embedded in curricular instruction to enhance metacognition from the perspective of the educator. To understand how students apply domain-specific knowledge to academic tasks would be an interesting area for future research, but may distract from the concentrated purposes of this study.

Figure 1. Borkowski’s Process-Oriented Model of Metacognition (2000)
An emphasis on instructional strategies and influence on executive processes, motivation, and independent employment were shaped by Borkowski’s theoretical framework. Executive processes are supported explicitly by strategy instruction and generalization through consistent teaching, and motivation is fueled by successful employment of strategy use and understanding value to learned practices. Independent employment of strategies that allows for goal-setting is a sophisticated tenet of Borkowski’s framework, and the research seeks to understand how developed students appreciate metacognition as a means for setting goals and persevering with difficult tasks or problems.

Conclusion

Students with learning disabilities who are encouraged to employ strategies to cognitive tasks see a striking increase in motivation. Borkowski’s framework affirms the importance of providing students with a strategy-oriented education, in addition to individualizing this instruction and allowing students to continually apply strategy use to a variety of meaningful contexts (Postholm, 2010). Overall, this model offers a method for students with LBLD to independently find success in alignment with the in-depth and consistent instruction that makes language-based learning programs unique.

Because metacognition cannot be measured due to its internal nature, and LBL students struggle with language as a result of the disability, Borkowski’s theory does not offer a method for measuring student growth in the LBL classroom that is completely reliable; this is a problem across all metacognitive theories. Additionally, the model does not offer explicit suggestions for dealing with impulsivity that may impair a student’s ability to consistently monitor their work or appropriately select a generalized strategy. What the model does offer, however, is a plan to be flexible and individualize student learning by responding to their processes in a way that suits
their needs. The purpose of this study is to understand the experience of teachers as it fits into this framework; alignment and findings will shed insight into the role of metacognitive and self-regulatory teaching strategies on student success.

**Chapter Two: Literature Review**

The purpose of this study is to understand the experiences of Massachusetts high school teachers in Language-Based Learning (LBL) programs with regard to how they perceive metacognitive and self-regulatory instruction. The research also seeks to understand how they make sense of those experiences in relation to supporting the development of writing skills of their students with LBL disabilities. To explore the complexities of the challenges faced by students with LBLD and teaching practices for educators, this literature review will address four main areas of scholarship. First, it will provide an overview of cognitive skills that are necessary to navigate the complex writing process, including working memory and processing speed. Second, it will explore the language and literacy skills that serve as a foundation to the writing process; students must access these skills in order to move on to sophisticated writing. Next, it will explore the role of executive function skills, metacognition, self-regulation, and self-regulating learning strategies (SRL), and how these abilities and strategies influence the LBLD learner. Fourth, it will explore the complexities of the writing process for the LBLD learner, as well as teacher perceptions of metacognitive instruction and self-regulatory learning. The review concludes with a summary of the intersections between these four strands in the literature.

**Language-Based Learning Disabilities**

Students with LBLD exhibit language deficiencies that are rooted in cognitive limitations such as working memory, processing speed, and foundational linguistic abilities. The need to self-regulate through the writing process is essential because this communication
includes expression of individuality, self-advocacy, creativity, and meaning-making, which combined ultimately serve as a vehicle for independence and sense of self (Portillio, Vidiella, Garcia, 2016; Westby, 2014). Metacognition is a function of language, and language is the “mediator of awareness” (Portillio et al., 2016, p. 76). That language is the central disability to students with LBLD does not dismiss the need for them to communicate clearly and for them to develop metacognition to mediate this process. Such skills involve planning, specific goal setting, explicit instruction, frequent teacher feedback, reflection, and generalization of learned skills across other subject areas.

It is possible for students with LBLD to achieve a heightened sense of metacognition, or understanding of one’s thinking, with explicit instruction and modeling that hones linguistic thinking processes. By addressing weaknesses with language, executive functioning, and self-regulation through proper instruction and use of strategies, students with LBLD are capable of accessing complex cognitive tasks with increasing independence. One such task includes writing, a vehicle of communication necessary for students to navigate the world.

**The Role of Cognition in Learning for Students with LBLD**

Working memory and processing speed are foundational cognitive skills necessary to take in information, process and connect to this information to prior knowledge, and produce a response. The rate at which this information is received is determined by processing speed and the amount of information the brain can hold and manipulate is determined by working memory ability. Although the primary disability in students with LBLD is language, it is not uncommon for these students to present difficulties that include working memory and processing speed (Moura, Pereira, Alfaiaite, Fernandes, Fernandes, Nogueira, Moreno, & Simoes, 2017, p. 297). Not only do these areas of cognition accompany the language-based disability, they also fuel it.
Research has suggested that “reading and writing disorders may be a result of underlying neuropsychological dysfunction, specifically in verbal, working memory, and processing speed abilities” (Parke, Thaler, Etcoff, & Allen, 2015, p. 2). In fact, students who exhibit weaknesses in the areas of encoding and decoding, vocabulary, processing speed, and working memory are likely to develop comorbid reading and writing deficiencies (Mellard, Woods, Desa, & Vuyk, 2015). Working memory and processing speed are important to comprehension of new information and complex tasks such as writing because they require the mind to be cognitively flexible; for example, the mind must switch between storage or maintenance and processing during a listening task, and the speed at which this happens depends on working memory and processing speed ability (Georgious & Das, 2015; Nouwens, Groen, & Verhoeven, 2014). Flexible shifting occurs similarly across the reading and writing process and is therefore necessary to understanding how students with LBLD manage information and express themselves through writing.

**Working memory.** Working memory encompasses a series of cognitive functions that serve to temporarily store and manipulate information (Henry & Botting, 2017; Titz & Karbach, 2013). While there are several competing conceptualizations of working memory, the Braddeley Working Memory Model (2000) is frequently cited in the literature (Fishbach, Konen, Rietz, & Hasselthorn, 2013). The model has four components: the central executive system; the phonological loop; the visuospatial sketchpad; and the episodic buffer (Fishbach et al., 2013; Henry & Botting, 2017). The central executive component refers to the mind's ability to hold and process information in order to plan, problem-solve, or apply strategies accordingly (Fishbach et al., 2013; Nouwens et al., 2014). Cognitive flexibility, inhibition, and updating are part of this central executive component; these core components control executive function, which draws
upon central executive tasks (Fishbach et al., 2013; Nouwens et al., 2014). The phonological loop stores verbal, or speech-based, information, and the visuospatial sketchpad serves an opposite function in that it stores visual and spatial information (Fishbach et al., 2013; Henry & Botting, 2017; Nouwens et al., 2014). The episodic buffer connects information from long-term knowledge to what is temporarily stored in the working memory, making sense of this information (Henry & Botting, 2017).

Little is known about the relationship between working memory development and learning disabilities, specifically literacy disorders (Fishbach et al., 2013). However, measures of working memory “have repeatedly been shown to predict more variance in academic abilities than measures of intelligence,” and they serve as a predictor of how successful students will be in acquiring literacy skills (Titz & Karbach, 2013, p. 3). Literacy disorders include “limitations in phonological storage and in phonological central-executive working memory” (Fischbach et al., 2013, p. 269). Therefore, it is understandable that deficits in phonological abilities and deficits in working memory are intertwined, considering the central role of the phonological loop to the working memory process.

In writing, working memory is a “limited capacity resource” that must coordinate transcription, the actual process of writing, and composition (the construction of thought) in very short periods of time (DeBono, Hosseini, Cairo, Ghelani, Tannock, & Toplak, 2011, p. 1405). Working memory delicately shifts between transcription and composition within these short time constraints to produce writing (DeBono et al., 2011). Working memory is especially important to writing because it helps an individual make sense of information at hand, connecting what is already known to new information, allowing for formulation of thought; because of this,
“working memory is particularly relevant to understanding spoken language and written texts” (Henry & Botting, 2017, p. 21).

Weaknesses with working memory exacerbate the flexibility of thinking and executive function. Indeed, working memory plays a “prominent role in theories of executive function” because it allows people to “store and manipulate information at the forefront of cognition” which is necessary for shifting and self-regulation throughout the complex writing process (Rapport, Alderson, Kofler, Sarver, Bolden, & Sims, 2008, p. 825). Students with LBLD who have verbal and nonverbal memory limitations demonstrate difficulty with comprehension due to limited language skills needed for reasoning, reflection, and self-questioning; this is exacerbated by trouble “controlling their attention and inhibiting… irrelevant verbal information during reading [and writing] tasks” (Duke et al., 2014, p. 457). According to DeBono et al. (2011), a “lack of automatization of low-level processing places a heavier load in already limited working memory capacity… impacting written expression performance” (p. 1406). Working memory is also responsible for a learner’s ability to delete unnecessary information, thus relieving working memory from holding on to information that is not required to complete a task (Borella & Ribauipierre, 2014). Because the working memory can only hold on to small amounts of information at a time, it is necessary for that information to be relative to the task at hand. Students with trouble inhibiting information might hold on to irrelevant details that not only tax the working memory but that also inhibit the ability to comprehend or to move forward with a cohesive thought (Borella & Ribauipierre, 2014). Therefore, the role of working memory in processing and maintaining appropriate and relevant information is necessary to create, manipulate, and produce written content.
**Processing speed.** Processing speed is fundamental to literacy, learning, and the writing process overall because it relates to how fast information can be processed and, thus, understood (Borella & Ribaupierre, 2014; Shanahan, Pennington, Verys, Scott, Boada, Willcutt, Olson, & DeFries, 2006). In addition to processing new information, processing speed allows students to “perform simple tasks with automaticity so that attention can be focused on more complex tasks” (Benner et al., 2008, p. 310). When simple tasks such as foundational literacy skills are not fluid, processing speed is impacted because learners are “stuck” trying to compensate for gaps while pushing forward with increasingly complex tasks. Comprehension is impacted by processing speed because it relates to how fast an individual can read, encode, and retrieve information from memory to make sense of new information; not only is the speed necessary for understanding, but also for retaining information, both which contribute to the pace required to comprehend (Borella & Ribaupierre, 2014).

Processing speed “underlies many cognitive skills including reading word recognition, reading comprehension, verbal ability, and verbal reasoning” (Benner, Allor, & Mooney, 2008, p. 310), which explains why impaired processing speed is the likely indicator of a disability in the area of reading and, therefore, writing (Benner et al., 2008; Borella et al., 2014; Jacobson, Koriakin, Lipkin, Boada, Frijters, Lovett, Hill, Willcutt, Gottwald, Wolf, Bosson-Heenan, Gruen, & Mahone, 2017; Mellard et al., 2015; Moll, Gobel, Landerl, & Snowling, 2016; Peterson, Boada, McGrath, Willcutt, Olson, & Pennington, 2017; Shanahan et al., 2006). Processing speed, which may also be referred to as “naming speed, rapid naming, lexical retrieval, temporal processing, information processing, [or] response time” (Benner et al., 2008, p. 310) refers to how individuals comprehend and respond to external stimuli, and it is broken down into “perceptual, cognitive processing, and output speed” (Shanahan et al., 2006, p. 586).
The cognitive components that measure processing speed are still somewhat elusive; while the timing and speed of a task may be measured, it is difficult to determine how or if these tasks measure the same cognitive process because, in addition to speed, they also call upon other underlying skills (i.e. digit span, coding and symbol search, rapid naming subtests) (Gruen & Mahone, 2017; Shanahan et al., 2006). However, in a study conducted by Shanahan et al. (2006), individuals with reading disabilities reacted more slowly to speed tasks unrelated to linguistics, which suggests the causes of processing speed deficits do not stem from weaknesses in language. Three decades of research has supported the presence and importance of processing speed deficits in learners with reading disabilities (Shanahan et al., 2006).

Summary

In summation, processing speed and working memory work together because working memory is responsible for retrieving, retaining, and sorting information while processing speed controls the rate at which this happens (Borella & Ribaupierre, 2014). While deficits in these areas are early indicators of LBLD, they also add an additional layer of complexity to the way strategies may be taught, perceived, and internalized to support language tasks and metacognition among students with LBLD. In this sense, it is necessary to be cognizant of strategies that not only bridge self-regulation with language support, but that also prevent working memory overload and offer deliberate pacing tailored to the individualized needs of the learner.

Literacy: Foundational Skills to Consider

Literacy is a complex cognitive function rooted in a number of different foundational systems that contribute to comprehension and the ability to communicate effectively through writing; these systems, which are essential to foundational comprehension necessary to writing,
include phonology; orthographic, syntactic, and semantic skills; and pragmatic knowledge (Carlisle, 2014; Foorman, Arndt, & Crawford, 2011; Troia, 2009; Hall-Mills & Apel, 2013; Wallach, 2004). When there are gaps in foundational skills, writing that must grow increasingly complex is affected. According to Scott and Koonce (2014), students with LBLD are unique because they have “different profiles of language and literacy strengths and weaknesses, [so] uncovering the factors that account for any one student’s problems adds another layer of complexity” (p. 283). High school LBLD students grapple with finding a way to compensate for these cumulative learning deficits while trying to navigate through the increasingly sophisticated language reflective of both the school curriculum and mature social interactions (Sun & Wallach, 2014; Scott & Koonce, 2013). There is a reciprocal relationship between reading and writing, and automaticity in reading abilities are necessary to support the written expression process; gaps in these areas cause a breakdown in the writing process that results in greater difficulty, more time, and taxed working memory (DeBono et al., 2011). For these reasons, it is important to understand the underlying processes that serve as foundational skills necessary to navigate the writing process.

**Phonological awareness.** In order to understand the basis for all literacy, one must understand the role of phonology as a primary step in achieving access to spoken and written language (Troia, 2014). A phoneme is the “smallest segment” of spoken language, and a grapheme is the “smallest segment” of written language; together, they amalgamate as “letter-sound associations” (Troia, 2014, p. 228). Children acquire this sound and letter knowledge early in school, eventually learning to manipulate these sounds into syllables and spoken words through the development of phonemic awareness (Bourassa & Treiman, 2014).
A developmental phenomenon known as phonological processing is progressively built in conjunction with the development of vocabulary; it is characterized by the ability to understand sound-letter relationships based on information stored in the working memory (Troia, 2014; Wolter & Squires, 2014). Phonological awareness, phonological coding, and lexical retrieval make up the phonological processing skills that are essential to literacy achievement (Troia, 2014). Appropriately developing phonological processing skills will “rely on the phonological structure of language for… recognition, comprehension, storage, retrieval, and production of linguistic codes,” and are therefore essential to reading, writing, and speaking skills (Troia, 2014, pp. 227-228).

**Lexical development.** The brain stores knowledge of sounds, letters, and words according to similarity or frequency of use in what is referred to as the lexicon (Motsch & Marks, 2015; Troia 2014). The lexicon is functional through both long-term memory and working memory; the long-term memory stores all the words an individual has acquired, while working memory is the first stop in digging up these words and bridging new pathways to fresh information (Troia, 2014).

A well-developed lexicon is associated with successful social and academic growth so long as the individual perceives the language correctly (Motsch & Marks, 2015; Troia, 2014). Students with LBLD who present with dyslexia or a speech and language impairment (SLI) do not typically possess accurate representations of words within the lexicon, and the inconsistent ability to decode or hear a word accurately does not allow for the appropriate sounds and symbols to be stored within the long-term memory (Motsch & Marks, 2015; Troia, 2014). Inaccurate restructuring of information potentially could inhibit the reader, although “the causal linkages between imprecise representations and structural changes in the lexicon remain
uncertain” (Troia, 2014, p. 231). Regardless, delayed acquisition and retrieval of vocabulary from the lexicon is common in LBLD students as a result of reduced language, processing speed, and/or working memory ability.

**Fluency.** The LBLD profile typically presents with difficulty reading for reasons beyond phonological processing, such as attention, rapid naming, memory, and information-processing speed, all which impact fluency (Harrison, Goegan, Jalbert, McManus, Sinclair, & Spurling, 2016; Troia, 2014). With impaired fluency, it takes an individual a very long time to read and process information because the typical ability to retrieve words and sounds from the lexicon at a rapid pace is compromised (Troia, 2014). Working memory must therefore work harder to both decode and recognize the words while trying to make sense of them as they contribute to entire thoughts or ideas (Troia, 2014). This compromises the ability to comprehend language, because working memory is limited in its capacity to hold and process large amounts of information at once (Henry & Botting, 2017; Troia, 2014).

**Orthographic awareness and sentence structure.** Lexical development and fluency helps learners to establish understandings of word meanings, which in turn helps “a speller’s ability to understand, accurately store, and recall spellings” and thus promotes literacy in developing learners (Masterson & Apel, 2014, p. 585). An awareness of reading and spelling words based on knowledge of their meaning leads to more sophisticated learning that revolves around words presented as structured phrases, written thoughts, or sentences (Scott & Koonce, 2014; Sun & Wallach, 2014). Orthographic awareness is defined as the ability to create written language out of spoken words (Bourassa & Treiman, 2014; Masterson & Apel, 2014). As young children learn spelling combinations and patterns over time, repeated efforts to decode and encode words take on an image form in the memory called a mental graphemic representation
(MGR), which contributes to fluency in spelling and writing (Masterson & Apel, 2014). The number of MGRs and the clarity with which they are retrieved increases as individuals consistently improve upon their decoding abilities and are exposed to more written language; retrieval of these images from memory allows for faster recall and less stress on working memory throughout the writing process (Masterson & Apel, 2014; Wolter & Squires, 2014).

Writing is compromised when the working memory is taxed by attempts to both spell and transcribe thoughts through writing (Harrison et al., 2016). This written component is further complicated by syntactics, or sentence structure and awareness of grammatical rules. This is a complex component of literacy because “reading and writing can require a more conscious awareness of what a sentence is, how logical connections and information are established in complex sentences” (Scott & Koonce, 2014, p. 295). As sentences grow denser, applied knowledge of grammar, multi-clause sentences, and linguistic forms such as words with more than one meaning or technical terms contributes to the increasingly demanding nature of literacy (Sun & Wallach, 2014, p. 31).

**Pragmatics.** Up to this point, there has been discussion about the concrete literacy skills that warrant an ability to decode, orally produce, and spell words and sentences according to the sounds, meanings, mental images, and patterns of language that are established within the lexicon and memory (Carlisle, 2014; Masterson & Apel, 2014; Scott & Koonce, 2014; Sun & Wallach, 2014; Troia, 2014). In addition to these foundational skills, literacy also is heavily rooted in social cognition and more abstract methods of accessing oral and written modalities (Troia, 2011). The way an individual uses inferential reasoning to determine an author’s perspective or understand the purpose of audience, also referred to as presupposition, is necessary to appropriately understand the contextual lens through which information is
interpreted (Troia, 2011, p. 41). Thus, pragmatic skills also are central to understanding social purpose within the bounds of social context; this awareness is necessary in order to both understand and maintain the focus and organization of a topic, as well as the ability to simplify information, elaborate on ideas, and apply “lexical cohesion created through the use of synonyms, antonyms, hyponyms, repetition, and collocation” (Troia, 2011, p. 42). Students with LBLD demonstrate difficulty understanding abstract language and social cues due to “underdeveloped social and pragmatic skills” (Qualls, Lantz, Pietrzyk, Blood, & Hammer, 2004). In a student with LBLD, command of flexible language is limited, and therefore the ability to interpret social pragmatics through the expression of language also is inhibited.

Finally, literacy reaches its most abstract peak through the use of figurative language and words with multiple meanings because it does not have a concrete basis for understanding (Qualls et al., 2004; Troia, 2011). According to Troia (2011), this type of language is used frequently in both academic and social settings, and “nearly two thirds of spoken English is figurative in nature” (p. 42). Qualls et al. (2004) posited that “adolescents with LBLD not only have difficulty with literal language processing, but they also have great difficulty with comprehending and using nonliteral language” (p. 2). Developing an abstract understanding of words that are not confined to one singular meaning is essential to using language to build upon relationships and ideas that are complex in nature (Troia, 2011). Students at the high school level are expected to have achieved metalinguistic maturity to a certain extent, meaning they possess these grade-level vocabulary skills, can manipulate language according to context, and can make abstract predictions based on concrete findings; in students with LBLD, these skills are not appropriately developed (Qualls et al., 2004).
Comprehension. Comprehension is necessary to the writing process because it fuels writing content and allows students to understand what their goals are for a writing task. Individuals with LBLD struggle to comprehend information independently due to the developmental language disorders that make foundational literacy skills difficult to acquire; developing abilities cumulatively is a challenge because students “process language more slowly, proportionately reducing the ability to successfully integrate information from the text” through written presentation (Harris-Wright & Newhoff, 2001, pp. 308-309). Creating a sense of fluent and automatic usage, or automaticity, of comprehension skills through metacognition and self-regulation will enable LBLD students to develop the necessary skills to employ appropriate strategies for comprehension in a variety of situations (Swanson & Deshler, 2003; Westby, 2014).

Knowledge of background information, vocabulary knowledge, linguistic and metalinguistic abilities, and working memory capacity are leading contributors to comprehension (Harris-Wright & Newhoff, 2001; Wallach, Charlton, & Bartholomew, 2014). Furthermore, students at the secondary level are expected to synthesize information, evaluate perspectives, and comprehend information that is unfamiliar in a variety of disciplines; critical thinking, abstract application, and detailed responses grow more involved as students advance to grades that leave practices for foundational literacy behind (Wallach et al., 2014). This puts students with LBLD at a greater disadvantage because they are oftentimes “deficient in the foundational literacy skills, including decoding and comprehending literal meaning” (Wallach et al., 2014, p. 487). Even among students with LBLD who are capable of attaining basic decoding and vocabulary skills, it is not unlikely that social information processing and impaired pragmatic abilities inhibit
the capacity to apply an accurate sense of perspective necessary to make inferences about relationships and characters (Donahue, 2014).

As students with LBLD advance to secondary grades, they are faced with the daunting challenge of accessing information in a variety of disciplines under the guise of assumed background knowledge and the ability to make inferences about abstract and implicit ideas (Wallach et al., 2014). Individuals with LBLD are “more likely to interpret ideas based on personal feelings or experiences than on information from the text… they had more difficulty in identifying the theme or main idea” (Donahue, 2014, p. 331). Multi-modal skills integrate knowledge of the world, text, and self with logic, causality, and time to create meaning; students with LBLD typically lack the sense of perspective that allows them to fill in gaps and identify relevant information without supports (Donahue, 2014; Harris-Wright & Newhoff, 2001). When students rely on their own knowledge base more than the new information that is presented to them, there is an:

over-reliance on prior knowledge… that may reflect readers’ difficulty in extricating themselves from their own perspectives… perspectives that readers naturally bring to specific texts have been found to be strong influences on their perception and encoding of social cues (Donahue, 2014, p. 331).

It is necessary to check for understanding to ensure that students do not rely on their background knowledge to such an extent that their comprehension is impacted as a result of the overcompensation.

Students with LBLD may have limited background knowledge or lack the lexicon to explain prior experiences; in an attempt to connect information to something they know, it is possible for students to apply incorrect background information to literature (Wallach et al.,
As a result, it is essential to assess this knowledge to make sure it is applied accurately when reading (Duke, Cartwright, & Hilden, 2014). According to Wallach et al. (2014), “it may be a losing battle… to attempt to ‘fill in’ the missing background knowledge… Stay focused on the strategies we can teach to help students to become more effective learners who can acquire missing knowledge independently” (p. 489). To support these complex processes involving foundational language skills, comprehension and deliberate strategies are necessary to ground the learner with a purpose that does not leave them mentally exhausted.

**Areas of strength.** This section of the literature review has offered considerable exploration of the weaknesses that serve as barriers to traditional instruction for students with LBLD. Research in this area remains controversial, with some scholars asserting the existence of another side to the deficit coin. According to Fischbach, Konen, Rietz, and Hasselthorn (2013), “deficits in phonological information processing are balanced by strengths in the visual-spatial domain. This approach is based on the assumption that left-hemispheric deficits, leading to phonological impairments, accompany right-hemispheric strengths are responsible for visual-spatial processes” (p. 281). Studies have been inconsistent with these findings, but von Karolyi (2003) conducted a study that concluded that children with disabilities in the area of literacy commonly possess strong visual-spatial skills. This was supported by Winner, von Karolyi, Malinsky, French, Seliger, Ross, & Weber (2001), who posited that learners who present with reading disorders “perform better on spatial than on sequential or verbal tasks” (p. 83). There are higher incidences of dyslexia in careers that require these abilities, such as engineering, architecture, and art (Winner et al., 2001).

Studies that oppose these findings and contest this assumption argue that the preference for nonverbal professions is a result of choosing an occupation that does not demand mastery of
areas of significant weakness (Winner et al., 2001). Regardless of whether visual-spatial learning
is a strength that is relative or remarkable for learners with LBLD, learning that centers around
visual-spatial tasks (i.e. multisensory instruction) is preferential for these students and should be
explored in strategy instruction to support metacognition and writing.

Summary

As a child develops, the foundational cognitive skills and language functions are built
upon to support the complex and abstract components of literacy that include comprehending,
inferring, and responding to the structure of spoken and written words (Foorman et al., 2011;
Hall-Mills & Apel, 2013). Sun and Wallach (2014) stated that through the process of building
skills that are both interdependent upon one another and necessary for higher levels of literacy,
deficiencies become apparent among LBLD learners. These deficiencies manifest uniquely
among each individual, but the gaps widen and compound as language becomes increasingly
dense (Sun & Wallach, 2014). To conclude, comprehension is rooted in a multitude of
underlying components that are interdependent upon one another; accuracy in understanding is
essential to achieving success with more complex tasks that enhance metacognition.

Through SRL, strategy use, and tools to compensate for deficits in memory and word
retrieval, students with LBLD can learn to attach language to the processes of metacognition and
writing. While there has been significant research into the isolated skills that impact learning and
therefore delineate areas of focus in the LBLD classroom, there is little research that explores
writing techniques and methodologies that benefit the LBLD learning profile (Mason & Graham,
2008). Justification of this need is apparent, however, through research that explicitly outlines a
need for further intervention to enhance the learning process for students with LBLD in the
classroom.
Executive Function Skills, Metacognition, and Self-Regulation

Learning is influenced by an ability to activate prior knowledge, maintain sustained attention, and possess an accurate sense of self-knowledge, or metacognition, to apply appropriate strategies to learning (Vaidya, 1999). Students with LBLD demonstrate difficulty with “maintenance and generalization” of these learned strategies (Wong, 2001, p. 9); however, it is difficult to quantitatively measure how acutely aware learners are of what they know and do not know because metacognition is an internal process, not an outcome (Garrison & Akyol, 2013).

Comprehension skills are bridged with metacognition and a personal control of this consciousness, or self-regulation, through the use of language; all abilities in literacy and understanding are impacted to a certain extent as a result of the LBLD. While metacognitive tasks focus on the mind of the individual as a control center for thought processes and self-consciousness, self-regulation is rooted in a belief that deliberate control of these thoughts, actions, and attention are responsible for awareness and the learner’s response to evaluating work; this response is triggered by both metacognition and environmental factors (Dinsmore, Alexander, & Loughlin, 2008; Fox & Riconscente, 2008; Garner, 2009). Enhancing skills in the aforementioned areas with support of linguistic tasks through SRL strategies allows students with LBLD to develop strategies and set goals to control and monitor the writing process, flexibly responding to changes throughout this process to meet these goals (Garner, 2009; Westby, 2014). SRL is unique from metacognition and self-regulation because it is a practice that maintains an “exclusive focus on academic learning… unlike metacognition or self-regulation, SRL did not find its way into the classroom or academic realm. It began there” (Dinsmore et al., 2008, p. 405).
Where deficits in language-based skills are biological, self-regulation practices are a product of explicit instruction through “education and practice” (Westby, 2014, p. 343). These practices account for both internal and external factors that are influential in both comprehension and writing. In sum, self-regulation is a means of controlling metacognition (through actions, thoughts, and feelings) in order to achieve a goal, and SRL strategies are the academic practices that allow LBLD students to tap into their self-regulatory abilities and, as a result, enhance their sense of metacognition (Dinsmore et al., 2008; Fox & Riconscente, 2008; Garner, 2009; Westby, 2014). Metacognition and self-regulation are “parallel and intertwining constructs that are clearly distinct yet mutually entailed both developmentally and in their functions in human thought” (Garrison & Akyol, 2013, p. 87). That is, metacognition supports and feeds off self-regulation, and both serve as a basis for self-regulatory strategies in learning. The planning, monitoring, and control processes that are central to metacognition are central to self-regulation and, interestingly, the writing process itself (Garrison & Akyol, 2013).

**Executive Function Skills**

Executive function skills are rooted in working memory abilities (DeBono et al., 2011) and allow students to organize both their thoughts and actions to reflect strong planning skills, and “working memory is one major category of executive functions” (DeBono, Hosseini, Cairo, Ghelani, Tannock, & Toplak, 2011, p. 1406). At the micro level, cognitive organization is “the ability to control attention and the contents of working memory. At the macro level, organizational skills allow individuals to prioritize, manage time effectively, and keep track of tasks and belongings” (Garner, 2009, p. 407-8). These skills encompass the mental capacity to focus on cognitive tasks necessary for understanding (such as inferencing, applying background
knowledge, ignoring information that is not beneficial for comprehension), as well as planning processes that allow for this understanding to happen (Duke et al., 2014; Garner, 2009).

Executive functioning does not rely upon language for implemented use (Westby, 2014). However, the use of language while employing executive function tasks helps improve abilities in this area and suggests that executive functioning is an inherent weakness in students with LBLD. In addition, LBLD learners typically present with impaired working memory (Berninger, 2008). Students with LBLD who have verbal and nonverbal memory limitations demonstrate difficulty with comprehension due to limited language skills necessary to reason, reflect, and self-question coupled with trouble “controlling their attention and inhibiting… irrelevant verbal information during reading [and writing] tasks” (Duke et al., 2014, p. 457). Executive functioning supports mental shifting that allows students to self-monitor, self-regulate, and update working memory in order to set goals and plan for the writing process (Altemeier, Abbott, & Berninger, 2008).

That the foundational skills for executive functioning and, therefore, self-regulation, are weak suggests that executive functioning and self-regulation is an inherent weakness in students with LBLD. Moreover, there is a need to understand one’s work in order to shift and adjust strategies as needed to pursue a writing goal; the notion that comprehension and writing are weaknesses among LBLD learners also suggests that explicit instruction and support of executive function deficiencies is necessary for students (Altemeier et al., 2008). Frameworks for executive function, notably Zelazo’s Sequential Framework for Executive Functions, begin with “problem representation, followed by plan generation and then execution… and finally evaluation” (Altemeier et al, 2008, p. 589). This framework bears resemblance to Hayes and Flower’s influential model of the cognitive processes in writing, which posits self-regulation in
writing as complex due to reliance upon “executive functions involving inhibition, switching set, and updating verbal working memory” (Altemeier et al., 2008, p. 590). Thus, execution of sequencing tasks in both executive functioning and self-regulation of the writing process are near-identical. Where students with LBLD are impaired in executive functions and tasks involving language, one can deduct that explicit strategy and support is of utmost importance (Altemeier et al., 2008).

**Cognitive flexibility.** Students with LBLD demonstrate weaknesses in cognitive flexibility, or the “capacity to switch gears adeptly and adjust to changing demands, priorities, or perspectives” (Westby, 2014, p. 340). Cognitive flexibility is necessary in order to notice and fix errors that are made when writing; this flexibility also allows students to adjust their practice to be able to comprehend new information and apply alternate strategies when a current strategy is not working (Carretti, Motta, & Re, 2016; Westby, 2014). While foundational literacy skills such as decoding, fluency, and vocabulary are necessary to access the meaning of language, students must also apply executive function skills such as inhibition, planning, impulse control, motivation, and empathy to accurately comprehend a topic and create meaning through writing (Artelt & Schneider, 2015; Carretti et al., 2016; Wallach et al., 2014; Garner, 2009). Cognitive flexibility is essential to executive functioning because it allows the individual to “hold multiple elements of a task in mind and actively switch among them” while simultaneously evaluating and decoding the meaning of language (Duke et al., 2014, p. 458). Executive functioning abilities allow students to apply the aforementioned mental processes to their goals by planning to complete a task in a controlled manner; this controlled manner is directly influenced by self-regulation (Duke et al., 2014; Westby, 2014).
**Inhibition.** According to Westby (2014), inhibition is the ability to control a desire to give into temptation or distractions. The deliberation of thought allows students to prioritize tasks, sustain attention, and ultimately follow the determined actions necessary to achieve a goal (Duke et al., 2014; Westby, 2014). Students who employ strategic inhibition can suppress the desire to immediately respond or ignore information that is irrelevant to a goal (Altmeier et al., 2008; Boyle et al., 2016; Duke et al., 2014). Inhibition allows students to coherently formulate meaning from the text in order to understand the big picture, but LBLD students who struggle with inhibition have trouble ignoring extraneous details that are not beneficial to constructing overall text meaning (Boyle et al., 2016; Duke et al., 2014). As a result, students with LBLD may “recall irrelevant or inappropriate information from texts” (Duke et al., 2014, p. 457); compounded by failures to grasp implicit and abstract concepts, students with LBLD rely on explicit instruction, scaffolding, and individualized intervention in order to access executive functions (Duke et al., 2014; Sun & Wallach, 2014).

**Planning and goal setting.** Mentally organizing information necessary for writing in sequential order, or planning, is a component of executive functioning that makes comprehension possible (Duke et al., 2014). Goal-setting, which is part of the planning process, is a powerful and effective strategy for students with LBLD; goal setting is most powerful when it involves explicit instruction and guides students to set goals that are specific (Danoff, Harris & Graham, 1993; Mason & Graham, 2008; Mason, Harris, & Graham, 2011). Explicit instruction for planning these goals involves “learning the strategy, using the strategy, and generalizing and maintaining strategy use… students are also taught to self-monitor their progress in achieving goals” (Mason et al., 2011, p. 22). Self-monitoring becomes part of a “self-oriented feedback loop” where students evaluate their performance; when their performance does not correlate with
the task goal, students “respond to this internal feedback by adapting their approach to the academic task” (Dent & Koenka, 2015, p. 427). Self-regulated learners are capable of planning for writing and setting goals, using these goals to evaluate their performance throughout the writing process; because weaknesses in literacy, comprehension, and cognitive flexibility are inherent in students with LBLD, explicit instruction in self-regulation is necessary to navigate through complex academic tasks (Dent & Koenka, 2015; Duke et al., 2014; Garner, 2009; Mason et al., 2011).

Executive functions are mental skills that regulate inhibition, memory and attention, planning, and comprehension (Boyle et al., 2016; Duke et al., 2014; Westby, 2014). They allow students to focus on one task at a time, and follow a series of steps necessary to achieve a goal. The development of these skills is directly related to success in the areas of writing and comprehension (Boyle et al., 2016; Duke et al., 2014; Westby, 2014). Executive functions overlap with self-regulation, the “metacognitive guidance of learning,” (Garner, 2009, p. 411) and are responsible for setting goals that serve as measurement of task achievement (Dent & Koenka, 2015; Garner, 2009).

**Metacognition**

Metacognitive awareness is essential to comprehension and understanding because it is a process that is based on a person’s ability to consider how they think about their own thought process, and the level of accuracy between a person’s knowledge and how accurate this knowledge proves to be (Boyle et al., 2016; Desautel, 2009; Dinsmore et al., 2008; Jaleel, 2016; Westby, 2014). This knowledge involves awareness of cognitive strategies necessary to process information, requirements of a task, and a comprehensive perception of self; such introspection
is therefore responsible for attaining functional habits involving language, communicating, comprehending, and writing (Fox & Riconscente, 2008; Garner, 2009; Rahimi & Abedi, 2015).

Metacognitive awareness has three functions: declarative knowledge, which is related to factual knowledge and foundational literacy; procedural knowledge, which applies to awareness of knowing how to perform a task; and conditional knowledge, which is based on an awareness of how to apply learned strategies to in order to complete a task (Artelt & Schneider, 2015; Händel, Lockl, Heydrich, Weinert, & Artelt, 2014; Westby, 2014). Without automaticity of these three knowledge types, “working memory is stressed, making it difficult for students to attend to comprehension monitoring while they are attempting to decode or process information at word, sentence, or schema levels” (Westby, 2014, p. 351). Metacognitive knowledge is relative to the task perception necessary for acquiring comprehension and writing skills, because:

Task perceptions intertwine with metacognitive awareness. In turn, metacognitive awareness of strategies seems to foster changes in task perception. Metacognitive awareness… mediates between task perception and self-regulation: It helps students know how to adapt their strategic choices to the specific requirements of the task and why. In turn, self-regulatory experiences feed back into an increased awareness of conditional and personal strategies. Finally, monitoring and task performance evaluation are closely tied to how students perceive the task and their metacognitive awareness of… strategy’s effectiveness (Negretti, 2012, p. 170).

There is a cyclical, interdependent process involved in the ability to self-regulate and accurately perceive learning through metacognition. As students develop accurate self-awareness, personal strategies are enhanced to achieve “deliberate mastery of behavior involved in the development of functional habits” (Fox & Riconscente, 2008, p. 375). William James, Jean Piaget, and Lev Vygotsky attributed metacognition to consciousness of self that is constructed socially and
enhanced by an understanding that the perception of self must coordinate with both direct and abstract influences of the environment; controlled attention is necessary in order to detach from one’s thoughts in order to evaluate how they contribute to one’s understanding of self (Fox & Riconscente, 2008; Volet, Vauras, & Salonen, 2009). LBLD students may not be self-aware enough to fix an inaccurate response to writing as a result of the disability. In this sense, planning that calls upon students to set specific goals according to explicitly outlined expectations can help students make sense of their information. Frequent teacher feedback, modeling of the thought process, and practice determining whether writing matches up with specific goals and assignment outlines (using checklists, rubrics, scaffolding, etc.) helps students to become self-aware of their own process.

Students with LBLD do not necessarily have the skills in verbal fluency, receptive language, expressive language or problem solving that are required to explain or evaluate their comprehension of the writing process; students may have an awareness that there is a need for revision, but do not possess an ability to articulate this specifically (Negretti, 2012; Westby, 2014). Furthermore, it is possible that the memory or attention span of the LBLD learner limits the ability to retrieve or judge strategic approaches beneficial to metacognitive awareness, demonstrating weakness in the ability to self-regulate and judge information in a useful manner (Dinsmore et al., 2008; Westby, 2014). Sun and Wallach (2014), stated that “limited metacognitive skills make reading higher level text a daunting one,” causing individuals with LBLD to have trouble identifying and appropriating the proper strategies to build metacognitive awareness (p. 31). There are a variety of contributing factors: lacking knowledge of the appropriate strategy, ineffective strategy uses, or employment of superficial metacognitive strategies (Boyle et al., 2016). Inappropriate strategy use coupled with difficulty activating
background knowledge and regulating behavior impinges on a student’s ability to independently comprehend and evaluate information; metacognition is necessary for comprehension (Boyle et al., 2016).

**Self-Regulation and Self-Regulated Learning Strategies**

Self-regulation encompasses the cognitive and metacognitive regulatory processes that help students to “plan, enact, and sustain their desired courses of action” (Volet et al., 2009, p. 216). One particular theory for self-regulation is rooted in Vygotsky’s Zone of Proximal Development, which states that self-regulation pertains to how humans adapt according to dynamics and reality to achieve a goal (Fox & Riconscente, 2008; Volet et al., 2009). Similarly, psychologist William James posits “an emphasis on habit and will” (Fox & Riconscente, 2008, p. 376), while Piaget believed self-regulation “takes the form of will, or control of one’s desires and emotions” (Fox & Riconscente, 2008, p. 380). Self-regulated learning (SRL) strategies seeks to model ways to “select and enact cognitive strategies” according to a student’s personal level of cognition, behavior, and motivation (Dent & Koenka, 2015, p. 427). Students with LBLD benefit from direct and explicit instruction of SRL strategies, showing success when given the tools to know when to use an appropriate strategy for a specific assignment (Dinsmore et al., 2008). Self-regulated learning is used to set goals in the classroom, placing emphasis on the need to:

- concentrate on what is being taught, employ strategies necessary to organize and study information that must be committed to memory, create a working routine that is productive,
- utilize and apply resources in an effective fashion, check for understanding and performance,
- manage time, and self-advocate for assistance when necessary (Westby, 2014, p. 342).

Through the use of routine, students can develop skills necessary to manage their time while monitoring levels of understanding.
LBLD students struggle with “basic decoding strategies, comprehension, and language skills,” which inhibits a student from monitoring and self-regulating comprehension through metacognitive awareness because there is not enough working memory available to balance all of these demands at once (Westby, 2014, p. 346). According to Wallach (2004), there is a need to explore alternative foundational approaches to the “varying demands of language and learning tasks” that are creative and original; there is a need to cater to the processing demands that involve attention, comprehension, memory, retention, self-monitoring, and self-regulation (p. 52). Through “gradual release of regulatory control in an activity to build cognitive and problem solving” skills, self-regulation and the use of language to plan for learning are bestowed upon individuals (Westby, 2014, p. 344).

In writing, Self-Regulated Strategy Development (SRSD) is a model rooted in self-regulated learning that has “six stages for fostering strategy acquisition in a flexible, recursive manner” (Mason & Graham, 2008, p. 108). These stages incorporate planning and goal setting with pre-skills and identification of target strategies, as well as strategy discussion and mnemonic reminders for each step of the process (Mason & Graham, 2008). Explicit instruction is further achieved through strategy modeling and thinking out loud, and guided practice in using SRL strategies (Mason & Graham, 2008). Opportunities for revision and reflection are enhanced through independent practice and SRL procedures, and the overall process is teacher-supported for immediate feedback and language support (Mason & Graham, 2008).

Self-regulated learning is necessary for students with LBLD because it combines metacognition and self-regulation to monitor the learning process, and addresses “the interaction of cognitive, motivational, and contextual factors rather than their isolated contributions” (Westby, 2014, p. 394). The intention is to combine skills necessary for metacognition and self-
regulation through the application of learned strategies that are appropriate for the classroom setting (Boyle et al., 2016; Dinsmore et al., 2008). In this sense, self-regulation is effective when students learn to achieve both correct and habitual use of strategies that are applied appropriately to definitive tasks that warrant understanding (Artelt & Schneider, 2015).

Summary

In addition to weaknesses in language, students with LBLD demonstrate difficulty with cognitive flexibility that controls executive function, metacognition, and self-regulation. To enhance metacognition and self-regulation, addressing the thought process through explicit instruction, modeling, goal-setting, and SRL strategies provides the LBLD student with tools to access complex tasks that are rooted in language. Students with LBLD have difficulty with “organization, automatization, and integration of multiple processes and perform poorly on executive functions of inhibition and shifting” that is seen with cognitive flexibility (Altemeier et al., 2008, p. 589). Executive functions guide the complex steps required to navigate through a writing assignment (Altemeier et al., 2008).

The purpose of this study is to understand the experience of educators as they use metacognitive and self-regulatory teaching practices to enhance writing abilities among students with LBLD to encourage independence and communication skills. These skills are necessary both for academic success and for the development of self-expression that transcends the classroom learning environment. A conflict exists between metacognition and self-regulation, exacerbated by the comorbid nature of the disability that extends across executive function and literacy arenas. SRL strategies serve as a vehicle to bridge metacognition and self-regulation by providing/supporting/providing access to appropriate language and executive function skills that do not come automatically for students with LBLD.
Writing Process, Implications for Teaching Practices, Teacher Perception

Writing and metacognition are reciprocal in that writing involves “cognitive learning strategies, elaboration strategies, organization strategies, and comprehension-monitoring strategies” that are initiated and monitored through metacognition (Bangert-Drowns, Hurley, & Wilkinson, 2004, p. 32). The need to plan, monitor, evaluate, and employ cognitive strategies is essential to metacognitive ‘thinking about how one thinks,’ as well as the writing process itself (Bangert-Drowns et al., 2004; Gillespie-Rouse & Collins, 2016; Larkin, 2009). The monitoring process of writing is rooted in executive function and supported by working memory; the focus of self-regulation changes throughout the writing process because the process towards a goal is continually altered as thoughts are transcribed to a page (Larkin, 2009).

While writing may not be the sole ticket towards building metacognition in students with LBLD, “there is evidence to suggest that self-reflective metacognition is more important than content-focused reflection and elaboration” (Bangert-Drowns et al., 2004, p. 32). That is, writing that incorporates explicit instruction of self-regulation in an effort to enhance metacognition proves more beneficial than explicit content instruction that does not model self-regulatory learning practices that are more personal in nature. Writing can be viewed as “applied metacognition” (Larkin, 2009, p. 151), serving as a “tool of self-reflective monitoring” that provides students with opportunities to “evaluate their own understandings, confusions, and feelings about a topic” through explicit strategy instruction (Bangert-Drowns et al., 2004, p. 32).

The Writing Process

The writing process is complex because it requires students to simultaneously focus and shift through organization, rules, mechanics, the audience, effectiveness of communication, and whether the content that is written down reflects the goal of the writing and adequate
comprehension of the topic (Harris, Graham, & Mason, 2013). Students with learning disabilities, and LBLD in particular, struggle with organizing writing, setting goals for their work, composing, and revising work to adequately achieve a goal for writing (Harris et al., 2003; Mason et al., 2011; Mason & Graham, 2008; Santangelo, Harris, & Graham, 2008). There is a need for “extensive self-regulation and attention control,” which are areas of weakness for students with LBLD (Harris et al., 2003, p. 1). The self-regulated constructs that allow students to effectively write promotes learning and learning strategies because they calls upon students to actively draw upon and personalize their knowledge to formulate conclusions through speech and language (Bangert-Drowns, Hurley, & Wilkinson, 2004). Furthermore, writing enables the platform for feedback and self-reflection (Bangert-Drows et al., 2004).

Students with LBLD do not automatically possess appropriate contextual knowledge, which contributes to difficulties generating content (Santangelo et al., 2008). Difficulties generating the process in conjunction with histories of failure contributes to low levels of persistence and an “unrealistic sense of self-efficacy” (Santangelo et al., 2008, p. 79). The research supporting writing interventions for students with LBLD has gone largely underexplored; however, evidence supports that students with LBLD write shorter compositions that do not effectively communicate ideas in a coherent fashion, suggesting a cause for explicit intervention that supports self-regulatory learning strategies that allows LBLD students to focus on content and revision while freeing up constraints on working memory and executive functioning with effective strategies (Mason & Graham, 2008).

**Implications for Teacher Training and Teaching Practices**

Teaching students to utilize metacognitive strategies improves reading comprehension and provides LBLD students with an opportunity to develop awareness of their strengths,
weaknesses, and strategies that compensate for the disability (Duke et al., 2014; Negretti, 2012). Awareness of cognitive and metacognitive strategies in the classroom positively influences student perception of classroom abilities, which in turn stimulates motivation and academic improvement (Fang, Schleppegrell, & Moore, 2014; Negretti, 2012). Metacognition is not a skill taught by many high school educators because there is more emphasis on transferring content knowledge to students than on strategies for learning (Joseph, 2010). When there is more emphasis on teaching students to learn information than how to engage in the process of learning, students with LBLD become “passive and dependent learners who rely on the teacher or other students for assistance rather than their own abilities to resolve difficulties” (Joseph, 2010, p. 99). Educational structures mandate educators to test comprehension, rather than teach it, because there is pressure to cover a certain amount of material or prepare students for standardized, high-stakes exams (Joseph, 2010; Wilson & Bai, 2008).

In addition to teaching metacognition, teaching literacy at the high school level across all disciplines is not something widely understood by secondary educators, nor is it something most feel is part of their role (Ehren et al., 2014). Secondary educators “are not usually prepared to teach listening, speaking, reading, and writing as part of their teacher education programs… and they often do not see the connection between subject-area achievement and the literacy access skills and strategies to promote content mastery” (Ehren et al., 2014, p. 631). However, language underlies all aspects of learning and is therefore a key factor in teaching content-specific subjects, especially for students with disabilities (Ehren et al., 2014).

Students who present with LBLD benefit best from “[advanced organization and explicit practice] in writing that involves questioning, sequencing, modeling, organizing, and scaffolding (Swanson & Deshler, 2016, p. 124). The need for explicit instruction of strategies used in context
is based on the historical difficulties in “generating ideas, choosing topics, demonstrating domain knowledge, and using appropriate writing strategies” (Kaldenberg, Ganzeveld, Hosp, & Rodgers, 2016, p. 938). These impairments are further impacted by the LBLD student’s overestimation of personal writing ability, which may be a result of learning strategies for writing outside of context (i.e., in a learning center), rather than applying them within a writing curriculum (Danoff et al., 1993; Kaldenberg et al., 2016). After years of failure without understanding why, in addition to poor comprehension as a result of the disability, a gap exists in the accuracy of a student’s perceived level of achievement; thus, a sense of inflation or disadvantage may result. Particularly in the realm of teaching students with LBLD, there has been success teaching students “goal-directed cognitive processes” through explicit instruction (Danoff et al., 1993, p. 296). According to Mason, Harris, and Graham (2011), research supports that “explicit, interactive, scaffolded development of powerful composing strategies and strategies for self-regulating the writing process” has greatly improved writing performance among students with learning disabilities (p. 20). Implementing such interventions for students with LBLD specifically may prove effective in teaching students how to become more effective, independent writers.

As mentioned throughout this review, students with LBLD “do not acquire a variety of cognitive and metacognitive strategies unless detailed and explicit instruction is provided” (Danoff et al., 1993). In response, research indicates a need for teachers to implement lessons that focus on direct instruction through modeling, discussion of metacognition and self-regulation across all instruction and application, and active practice with frequent teacher feedback (Joseph, 2010). Writing activities that incorporate self-assessment and encourage students to actively reflect upon their work is also beneficial to enhanced writing abilities.
Mental modeling and think-aloud techniques help students navigate through an otherwise mysterious thinking process because they are given tools that model the language they should be using while working through complex processes (Joseph, 2010). Reciprocal teaching is beneficial to students because they are given steps and feedback to refer to as they plan for and work towards a goal in writing (Joseph, 2010). Discussion of effective techniques for self-regulation and thinking is also beneficial to students because it personalizes the learning process (Joseph, 2010). Assuming that students with LBLD need support with both thought processes and work output involving language is the most effective method for enhancing the learning—and writing—process; teaching students to be aware of how they think, with strategies to support steps along the way, is of utmost importance for building metacognition and independence in LBLD learners.

Teacher Perceptions

Educators who possess an understanding of strategies rooted in metacognition can promote positive change for students with LBLD because teaching students the writing process promotes autonomous learning (Iwai, 2016; Rahimi & Abedi, 2015; Vaidya, 1999). However, a study conducted by Lesley, Watson & Elliot (2007) found that most teachers read for the sake of completing an assignment and do not necessarily apply a wide range of metacognitive strategies to their work. While many of the teachers were instructed how to use metacognitive strategies with their students, there was not necessarily a transfer of these strategies in their own work (Lesley, Watson & Elliot, 2007). Steinbach (2016) found that only four studies have been conducted on teacher attitudes towards SRL, which supports the notion that “teachers are weaker at teaching SRL than researchers” (Dignath-van Ewijk & van der Werf, 2012, p. 2). Furthermore, metacognition is not a skill taught by many high school educators because there is more
emphasis on transferring content knowledge to students than on strategies for learning (Joseph, 2010).

**Summary**

In summary, metacognitive skills are necessary to develop sophisticated oral communication, written communication, verbal reasoning, and comprehension; among a population of students who struggle with tasks rooted in literacy, explicitly instructing students to utilize strategies that will compensate for the LBLD in achieving comprehension serves as a means of delivering instruction that encourages independence in a student (Boyle et al., 2016). According to Dinsmore et al., 2008:

There is a relation between clarity and precision of language and the ideas that take shape in the mind… individuals make efforts to monitor their thoughts and actions and to act accordingly to gain some control over them. It is, in effect, a marriage between self-awareness and integration to align these bodies of work (p. 404).

Metacognition, self-regulation, and self-regulated learning are bodies of work that intermingle with self-awareness and integration (Dinsmore et al., 2008). The process of learning allows students to develop awareness of their applied skills through the support of language tasks, and may facilitate growth through direct and explicit instruction that is applied to relevant, curriculum-based tasks.

**Literature Review Conclusion**

This literature review examined language-based learning disabilities and their impact upon a student’s ability to automatically self-regulate through the writing process, and presented research supporting the effectiveness of explicitly teaching metacognition to students with disabilities in order to improve writing skills. However, a discrepancy on effective writing
strategies for students with LBLD exists, which serves as justification for further research regarding the efficacy of methods of writing instruction for this population of students. Overarching themes emerged including the recognition of the importance of specialized instruction for LBLD learners, an awareness of the interdependent cognitive skills that must be acknowledged and addressed when teaching students to self-regulate throughout the writing process, and the need for explicit and prescriptive instruction that is co-constructed with students. Students with LBLD demonstrate difficulty with working memory, processing speed, language, executive function, working memory, and automatic self-regulation; all of these are intertwining skills necessary to complex cognitive processes. Writing, metacognition, and executive function are reciprocal abilities, meaning they are inextricably interrelated, and it is essential to address instruction in all three domains to ensure student success. Explicit modeling of skills, specific goal-setting, frequent feedback, reflective revision, and generalization of writing through self-regulation has proven beneficial to LBLD students. SRL strategies and metacognition both “play a significant role in autonomous learning that guarantees successful language learning” (Rahimi & Abedi, 2015, p. 171). While research is lacking that pertains to writing instruction for the LBLD population specifically, success in teaching the thought process to achieve more complex cognitive tasks benefits the student because it serves as a motivator and demystifies the linguistic processes. To progress in fulfilling the responsibility of ensuring equity among the special education population, further exploration of methods to satisfy a justified need for LBLD learners is necessary and appropriate. Additionally, findings from this study may also offer implications for best practice among struggling writers beyond the population of LBLD students. All children are capable of learning, and we as educators have a responsibility to explore the different pathways that allow access to education.
Chapter Three: Methodology

The purpose of this Interpretative Phenomenological Analysis (IPA) research study was to understand the experiences of educators serving a population of public high school students who present with Language-Based Learning Disabilities (LBLD) in substantially separate Language Based Learning (LBL) Programs. Historically, students who present with LBLD do not automatically apply metacognitive practices to learning; this is due in large part to the learning difference. Employing effective methods that best teach metacognition to students with LBLD is complex, and examining the experiences and perspectives of teachers within these types of learning programs will offer a deeper understanding of effective practices that improve writing and communication. The following question served as the foundation for this research:

- What are the experiences of Massachusetts high school teachers in LBL programs with metacognitive and self-regulatory instructional strategies?

This chapter outlines the reasoning behind the methodology and research design chosen for this dissertation; it also delineates the procedural plans for data collection and analysis that are appropriate for the purposes of the research. First, an overview of qualitative research design and paradigm informing this study will be provided. Next, the researcher’s positionality will be discussed as it relates to the study, followed by an exploration of the IPA research tradition. Third, participants’ characteristics and recruitment strategies, data collection methods, and data analysis procedures will be presented. Finally, the chapter will conclude with a section on trustworthiness, including ethical considerations, credibility, transferability, and the limitations of the proposed study.

Qualitative research embraces the need to understand the participants at levels of everyday life experiences that must be peeled away like an onion, while quantitative research
provides insight into the participants from a removed, and therefore objective, light. The purpose of the study is best served through qualitative research because the approach acknowledges the human meaning behind educational practices; there are many variables and human exchanges that cannot be isolated, concretely measured, or fully understood through quantitative measures (Guba & Lincoln, 1994). That is, human behavior cannot be understood without explanations, context, and interpretations that provide meaning and depth to research; indeed, stripping data of context removes considerable components of a research design that cannot necessarily be quantified (Guba & Lincoln, 1994).

Qualitative research aligns with the purpose of this study because metacognition and how students learn are processes that are acutely personalized and unique to the experiences of both students and educators. In this sense, qualitative research facilitates describing and understanding through the experiences and perspectives of the individuals involved in the phenomenon under study. The work is kept “honest” by including dual and interactive interpretations (from the researcher and the participant) of the topic and by incorporating direct quotes from the participant’s interview (Ponterotto, 2005). These in-depth interviews are conducted using open ended questions to gather data for analysis and to construct findings (Ponterotto, 2005). Qualitative research is shaped by the participant’s opinions, perspectives, and external influential factors that may not initially be apparent when using data collection methods and analytical approaches that are more distanced from participants’ experiences (Butin, 2010).

**Research Method**

IPA is the best suited method of inquiry for this study because it offers a unique qualitative design in that it is flexible and allows the researcher to ask a wide array of questions that can connect to a variety of theoretical perspectives (Smith & Osborn, 2015). IPA aligns with
the four principles of qualitative research: it is sensitive to the context, demonstrates commitment and rigor, emphasizes transparency and coherence, and seeks to understand and highlight the impact of a phenomenon (Pringle, Drummond, & McLafferty, 2011). IPA does not align with a particular epistemology, but it rather reflects the flexible paradigm of this methodology (Oxley, 2016). However, researchers will typically utilize the critical realist or contextual constructivist lens; the former which aims to establish that everyone sees reality differently and their language reflects their experiences, the latter which purports to construct a reality that “depends on the position of the perceiver” to make what is said valid (Oxley, 2016, p. 57). According to these principles, the researcher can interpret the data through a double hermeneutic experience while acknowledging that “perception is actually linked to the reality of the experience” (Oxley, 2016, p. 58). This method of inquiry is appropriate because of the need for flexibility in exploring the LBLD learning process, particularly considering how strategy use and metacognition are subjective, complex and, therefore, elusive.

The IPA methodology is informed by the phenomenological philosophy, which seeks to describe a phenomenon as accurately as possible to present and understand the perspectives and lived experiences of others (Finlay, 2009; Groenwald, 2003; Smith, 2011). It is designed according to the Constructivist-Interpretative paradigm of qualitative research in that it constructs the subjective reality as it exists within the mind of the individual (Ponterotto, 2005). Participants are chosen based on their connection to the problem of practice; information encompassing positionality, perspectives, and culture are taken into account, along with the participant’s position within the problem of practice, in order to conduct comprehensive research (Ponterotto, 2005). A central component of this paradigm is the relationship between the researcher and the participant, who co-construct the findings of interviews to determine its
meaning (Ponterotto, 2005). The Constructivist-Interpretivist paradigm places an emphasis on “lived experiences” from the point of view of the participants, and takes the relativist position that there are many constructed realities as opposed to one (Ponterotto, 2005, p. 130). The premise of the Constructivist-Interpretivist paradigm is to relay the story as an observation, assuming each person has their own unique perspective and there is no single truth that a researcher can determine. In sum, this paradigm of inquiry informs phenomenological research that is the foundation for IPA.

IPA goes one step beyond phenomenology by adding interpretive analysis that is phenomenological, hermeneutic, and idiographic (Carusi, 2016; Finlay, 2009; Groenwald, 2003; Oxley, 2016; Smith, 2011; Smith, 2017; Smith & Osborn, 2015). Idiography, or the understanding that perspectives are unique to each individual, and hermeneutics, or the interpretation of information, inform phenomenology in IPA because both acknowledge that there is not a direct path to understanding how others experience phenomena (Smith, 2011). This concession is further complicated by the notion that people do not always disclose their entire story and cannot always put into words what they want to say (Smith & Osborn, 2015). IPA utilizes a three-pronged approach incorporating phenomenology, hermeneutics, and idiography to remedy this conundrum. In this sense, IPA offers an “established, systematic, and phenomenologically focused approach, which is committed to understanding the first-person perspective from the third-person position… it is therefore committed to situating personal meaning in context” (Larkin, Eatough, & Osborn, 2011, p. 321). That is, IPA employs a coherent and legitimate framework to guide the interpretation of the participants’ explanation of personal lived experiences, which in turn interact with the researcher’s interpretation and analysis.
Hermeneutics takes the focus away from description and focuses on interpretation, emphasizing the influence of context on the phenomenon (Oxley, 2016). IPA is hermeneutic because the conceptions and understandings of the interviewee are processed and understood through the lens of the researcher (Oxley, 2016; Smith & Osborn, 2015). The researcher must make sense of how the participant makes sense of an experience; referred to as the double hermeneutic, this shared meaning-making is one of the unique features of IPA (Carusi, 2016; Oxley, 2016; Smith, 2011; Smith & Osborn, 2015). Because the researcher is presciently involved, reflecting on and acknowledging preconceptions becomes a cyclical and iterative process that must be revisited continuously throughout the research process (Oxley, 2016).

Idiography, meanwhile, seeks to understand individual perspectives and therefore focuses on small expert groups who can lend insight into a lived experience (Oxley, 2016). The findings from a small sample may not be easily generalized; however, the objective is for the researcher to look closely at individual cases and make general claims as they connect to already-established findings (Oxley, 2016; Smith, 2011; Smith & Osborn, 2015). The idiographic component of IPA analyzes each detail of the participant’s verbal account to uncover themes that arise from a story (Smith, 2011).

Using IPA, the researcher identifies a topic of interest, “brackets” their own knowledge and assumptions, and conducts interviews with participants who lend insight into that area of research (Smith & Osborn, 2015). Referred to as an interpretative cycle, the researcher makes sense of the participant’s experiences through self-reflection and formal, coded interpretation of the participant’s words (Smith & Osborn, 2015). The analysis is thus rooted in the actual words of the participant in conjunction with the researcher’s knowledge (Smith & Osborn, 2015). The flexibility of the semi-structured interview and the freedom to adjust research questions as
appropriate as the interview progresses allows participants a greater opportunity to offer their stories at considerable levels of depth.

The IPA approach allows the researcher to understand a participant’s experience at a rich and in-depth level (Smith, Flowers, & Larkin, 2009). The flexibility inherent to this methodology counterbalances the notion of subjectivity because freedom is given to participants to share their story as they choose to craft it (Smith et al., 2009). IPA involves an analytical process through which the researcher looks for patterns and themes supported by strong data (resultant of good interviewing and data collection) and transparent presentation of sampling (Smith, 2011). This approach represents an intermingling of the first and the third person, highlighting the importance of context, environment, and perspective (Larkin, 2011).

IPA presents findings of the research in narrative form, connecting the results to “broader theories and issues in education” (Young, 2016, p. 67). A table of themes forms the narrative, and direct quotes from the interviews distinguish between what is actually said and how it is interpreted by the researcher (Smith & Osborn, 2015). For this reason, direct quotes and metaphors are used to “root the analysis directly in their words” (Pringles et al., 2011, p. 21). That is, the findings of the narrative are anchored with direct quotes in order to lend reliability and validity to the final analysis (Pringles et al., 2011). Sufficient sampling, adequate space to elaborate important themes, and an analysis that “should be pointing to both convergence and divergence” is essential to the rigor demanded by IPA (Smith, 2011, pp. 23-24).

The seminal roots of phenomenology, the third component of IPA, sought to understand how an individual makes meaning of a phenomenon. From its origins, phenomenology has evolved significantly and continuously, making IPA an increasingly popular method for analyzing the unique experiences of those affected by today’s educational system. IPA serves as
an extension of phenomenology that facilitates the telling of the stories of individuals experiencing a complex and similar phenomenon; the researcher seeks to understand the unique perception of the subject, and it is therefore appropriate to employ IPA methodology in this research study.

The advantages of using IPA to conduct this research project are plentiful. Metacognition is not a measurable entity, but it is a central skill that is emphasized in the LBL Program. To lend insight into how this awareness of learning is modeled and transferred, IPA will allow the researcher to explore the experiences and perceptions of educators, which cannot be categorized easily, nor can it be readily homogenized or generalized. The study seeks to understand the phenomenon of how teachers make sense of the way their students develop language skills, learn, and express themselves through language, exploring the experiences of an expert group of teachers working within the context of these LBL programs as the homogenous sample.

**Researcher Positionality: Description and Identity of Perspectives**

In order to best examine my problem as a change agent and scholar-practitioner, I need to continually reflect and question my own personal bias and positionality. The purpose of my research study is to understand how metacognitive and self-regulatory teaching practices enhance writing abilities among students with LBLD.

**Personal School Experiences**

My desire to become a teacher was ignited in the second grade. I had extremely positive schooling experiences and loved my teachers. I wanted to work with a room full of kids whom I assumed had the same excitement for school as I did. My perspective has since changed, particularly as I realized I was a high-achieving student without learning difficulties. It became evident that I viewed school differently from my peers, and not everyone felt as excited as I did.
about school. For this reason, it is essential for me to analyze the perspectives that were shaped through my own school experiences.

Throughout my college experiences working in a variety of different educational environments, I realized that learning seemed to be the hardest for the kids who had disabilities and unstable home environments. Volunteering in special education programs and homeless shelters made me realize that not everyone felt as happy and confident as I did walking through the classroom door. For this reason, I became a high school special education teacher for students with moderate disabilities. I have been working in a Language-Based Learning Program with students in grades 9-12 for six years now.

I am a white, heterosexual female without a disability who grew up in a middle-class home. I enrolled in top-level humanities courses in a Catholic school from grades 5-12. I was an honor student in a school that, for the most part, did not cater to students with learning disabilities. My background and upbringing has allowed me to learn intrapersonal skills, which include organizing thoughts, semantics, and written/oral syntax that were reinforced both in school and at home by a mother who checked my homework every night. Long nights of conversation with family members in living rooms without electronic distractions helped me build the interpersonal skills that honed my ability to interpret verbal and nonverbal cues, while developing the oral communication, discussion skills, and pragmatics necessary to interpret social situations and thrive academically. Having a mother who was home to meet me at the bus and help me make sense of the world through constant conversation nurtured these skills and helped me to make sense of the adult world I was inching towards with each passing year of childhood.
It has always been easy for me to apply the rules of composition (knowledge of syntax, sentence structure, mechanics, encoding, and grammar) to write an essay, which also involves comprehension of the prompt as it fits into the context of the work at hand, evaluation of evidence, and organization of thought. My mother would correct and edit my work, and I picked up on these rules through her modeling and examples.

Years later, I learned the reasoning behind many of these rules. As a student, I just remembered them – it was automatic. I hated phonics and grammar books in the fourth grade because I knew how to break apart words and properly incorporate mechanics into my work. I didn’t understand how to break these concepts down, and I was frustrated at the feeling of wasting my time. I liked playing with words, trying to find creative ways to write unique sentences by holding them in my thoughts with the overall objective in mind. This flexibility and ability to hold onto language in my mind is something I never appreciated because it was always something I could do automatically.

When I consider the complexity of learning and the interdependence of skills necessarily to access a concept, I question how different a learning experience must be when a disability causes automatic learning to be difficult. I felt the drive to persevere because I had the confidence to know I would eventually succeed. Throughout my secondary education experience, I felt I could understand communication to perceive situations as they were intended. Communication and understanding, whether it is verbal, written, or unspoken, is regularly misconstrued regularly. Thus, when I consider language as an area of difficulty for my students, I look back at my own experiences to see that automatic understanding of words and intentions has left me in a position of advantage where I must continually look at the workings of how I communicate and what it would be like to have difficulty expressing my thoughts.
Positionality as a Teacher

As mentioned, my desire to work in special education came about through volunteer experiences where I realized not everyone learned with ease in school. I wanted to reach these kids, and show them how to feel good about their abilities. We are all human, and regardless of the labels we slap on students, we all understand an ability to love and feel loved through our relationships with others. This looks different for everyone, but my drive as a teacher has been to drive the learning process through these thematic lenses of humanity, and to figure out how to use language as a tool of communication to express understanding along the way. As an educator, I must constantly check in with myself to question how my own cultural capital molds my understanding of these themes, and I strive to encourage my students to do the same.

That being said, I try to find a way to teach students strategies that will allow them to independently comprehend literature, combining what I understand about it and how I think they understand it. I expect my students to express their analyses through both oral and written communication so that I can comprehend it because I assume that, if I can understand, the answer is correct. I have linguistic flexibility to try to present things in many different ways; the scaffolding and assistance that takes place may just be another means of infusing my own understanding in a search to make sure my kids have the “right answer.”

The duality of a student’s level of knowledge and sense of perspective are exacerbated by the disability that is shaped by the societal definition of what it means to be educated. Our education system places emphasis on specific subject areas and standardizes them according to how much should be acquired by a certain age. These requirements are tied to a diploma, which society has accepted as the baseline for competency as an employee in the workforce. There is an even greater emphasis on implementing adequate instruction tailored to the individual learning
profile of the student so that it may fit the standardized version they are meant to comply with, rather than finding and cultivating other areas of intelligence. And, infinitely, in this context, education is rooted in language. When the basis of disability is language, the stakes are quite high for students who present with learning differences because they must spend a significant portion of their educational time fitting into a standardized mold that is inherently difficult for them.

As someone who is aware of my students’ limitations due to the diagnosed learning disability, it is possible that I have accepted a level of performance at a lesser standard because I made an assumption that any other response would be beyond the cognitive capacity of these students. In another sense, it is possible that the way I treat others (my students) is influenced by socially-constructed sensitivity to the disability, altering a message or expectation that I may otherwise deliver differently.

I assume that my students perceive the world differently due to inhibited language abilities. I also often presume that the amount of knowledge they have acquired as a result of this difference (including knowledge about social pragmatics and unspoken “norms”) has been negatively impacted by their disability. In this context, I must be very aware of my own truths and perceptions to avoid making assumptions; I have to question other perspectives and find language to support these tasks (Takacs, 2002).

For the purposes of analyzing positionality, I will refer to my students as other. As their teacher and a representative figure of a historically oppressive system, I doubt my students are willing to act as openly with me as they would with peers, for I am not a member of this group (Briscoe, 2005). I question how I communicate learning with my students: I may misunderstand communication as they intend, which makes me question why I assume my language and
communication abilities are superior to that of my students. As a person who does not share this other commonality, the possibility for my misinterpretation of meaning is strong. I cannot help but wonder if the structure of education itself marginalizes special education students according to the curriculum, inherently discouraging “empathy and communication between different groups and reifies differences in positionality, which causes further divisiveness between the various social groups” (Briscoe, 2005, p. 38). Commonality in language and communication is essential to understanding. Consequently, if I assume that my students should learn to communicate as I do because they are not as capable (“I know what I am trying to say but I don’t know how to say it”), how do I find common ground in the teacher-student relationship?

**Metacognition**

I have also realized that how I come to an answer is something that is automatic; I had never put much thought into how I work through concepts in my mind until I stopped to consider the language that rapidly shifts through my brain when trying to solve something. When I think of my future studies and research writing a dissertation, finding the language to describe how teachers observe metacognition and the workings of the mind is difficult because the steps of the learning process become so automatic (or easily forgotten) that we don’t always know how to pair them with language. Considering the complexity of language and its meaning, along with the limited language abilities of my students (i.e., understanding words to have multiple meanings), how does one accurately slow down a thought process for others to accurately describe it so that it is understood as it is intended?

My process for breaking instruction into parts is based on what I know, on my own metacognition, and on the self-regulation that helps me to manage how I learn (Jaleel and Premachandran, 2016). I need to question how I am aware of my own knowledge, thinking, and
strategies to connect with learning, and I find that this is where analyzing positionality is most important for the purposes of my research (Jaleel and Premachandran, 2016). There is no one true way to understand the metacognition of another, because it is entirely rooted in both the personal knowledge that each individual possesses and the perception of this knowledge in the wake of personal experiences. We can communicate this process with one another, but it is so personal and automatic that an accurate picture of what we are doing in each moment of information processing may never be possible.

When my students are able to understand information but struggle to pair this with language, I offer language support to bridge communication; I question how this is truly possible when interpreting the metacognitive of another through my own interpretation and language. Furthermore, I possess the confidence to know that my thought process helps me succeed, and, that through perseverance, I will find satisfaction. Students who have disabilities under the definitions of standardized education have a wealth of experiences in failure, and the nature of a disability makes it hard to understand why or how that failure happens on a personal level. Metacognition is rooted in confidence of knowledge, and the label of special education has essentially informed students that they do not learn as everyone else does, which I imagine impacts the will to persevere significantly. I ask students to be independent learners so that they may build understanding, but when the understanding is muddied or disconnected as a result of the disability, I question how one truly learns to understand metacognition. In hindsight, I also question (again) why I assume that my sense of understanding and knowledge is superior to that of my students, simply because the way I communicate may be more easily understood.

The Deficit Model of (Special) Education
Students label themselves according to the “pervasive classical liberal theories of democracy that have informed everyday practice in public schools in the United States” (Franklin, 2014, p. 70). As a whole, mainstream academic knowledge reinforces inequality and inherent discrimination because educators do not necessarily possess the knowledge or background to embrace certain aspects of diversity as a result of otherness (Banks, 2006). We work in a system that places additional emphasis on programs for students who are “underachieving,” feeding schools with state and federal incentives to enhance the efforts necessary to help struggling learners (Hirsch, 2006). Despite the limited academic growth that has accompanied the standardization of education, I continue to work in an educational system that has not proven effective under the guise that special education students are not academic (or “good” at English according to the curriculum frameworks) and which informs me that I need to provide interventions to try to fix them (Franklin, 2014; Pazey, Heilig, Cole, & Sumbera, 2014).

I buy into this because standardization gives my kids a high school diploma and a shot at college, another socially constructed norm. It is quite apparent that the marginalization of other has created universal constructs that favor the majority of learners, while marking the special education students I teach as so utterly inferior that they must be taught in a separate classroom (Briscoe, 2005). Rather than portray the “non-normal” learners as unique, social identities mirror special education as students who are broken (Briscoe, 2005).

The universalization of education constructed to cater to one norm must be deconstructed if we truly want education for all; students labeled with learning disabilities cannot take ownership of an educational agenda they cannot relate to (Fennell, 2008). The deficit perspective suggests that access to educational spheres of society can be achieved regardless of cognitive profile or ability (Carlton Parsons, 2008). Furthermore, the institutional arrangements
that shaped the education paradigm during the Industrial Revolution have not changed much; they need to evolve considerably to maintain relevance in a changing economy, which has rendered the current education—and deficit—model obsolete. Socially, we continue to bow to these constructs.

Summary

I chose special education as my focus because I wanted to make students feel good about the ways in which they learn, and I remain in this field because I continue to have this drive. As I analyze my positionality, however, I cannot help but wonder what this actually means. It is so important to validate students and nourish their achievements, but I must continually analyze how I try to understand and influence the thought processes and metacognition of my students as they intend it. I need to continually scrutinize the assumption that I am right simply because I am in the role of educator, while also working to build communication skills that are conventionally understood according to standardized education frameworks. More importantly, I need to be aware of how I validate the voices of my students; their voices are not special education voices, or meanings altered simply because it came through the mouths of children whose language has been stamped as below-average according to a diagnostic assessment. The way my students make sense of the world through the language they have and understand is a reflection of their own positionality and vision. My role in protecting this, as well as nurturing and respecting these voices as separate and unique from my own, is essential as an educator. It is what I ultimately strive to achieve.

Participants

The study sought participants who were public school educators currently working with or who had previously taught students presenting with LBLD in the substantially separate
classrooms of suburban school districts. Educators had teaching experience working (currently or previously) within a LBL Program with established entrance and exit criteria (i.e. specific criteria to be considered for the program such as testing and performance) outlined in the district’s special education program of studies. Criteria for LBLD are generally consistent across Massachusetts school districts employing substantially separate programs.

For the sake of consistency in data, it was important that educators were working with a generally homogenous population according to similar criteria. Furthermore, criteria established at the district level allowed teachers to become experts in this learning environment, and their expertise of language, learning, and communication shed valuable insight on the research. For the purposes of this research, educators planned and taught writing within their curriculum; targeted content areas included English, history, and the sciences (i.e. biology). Given the limited nature of writing in mathematics courses, this subject was not be considered. Demographic information such as gender were not delineated in the criteria for choosing participants for this particular study, but were noted in the research after participants were identified.

Smith, Flowers & Larkin (2009) suggested that “between three and six participants can be a reasonable sample size” given that “many studies by experienced IPA researchers now have numbers in this range” (p. 51). For the purposes of this study specifically, four participants were used. Critics argue that such small sampling makes it difficult for the researcher to make generalizable claims (Oxley, 2016). However, IPA methodology does not look for one generalizable truth (Pringle et al., 2011; Smith, 2017). Rather, it seeks a “coherent and legitimate account that is attentive to the words of the participants” (Pringle et al., 2011, p. 23). While this approach is certainly unique in comparison with mainstream psychology and quantitative research, it is necessary to explore methodologies that lend understanding to the complex nature
of individual experiences and shared phenomena (Smith & Osborn, 2015). While sample sizes are small, the descriptive and analytic nature of the IPA methodology is time intensive and delves deeply into the experiences of experts who can offer significant insights into the field, based on their experiences and perceptions (Carusi, 2015).

The researcher planned to identify participants using purposive sampling, a nonprobability sample that was chosen by the researcher to represent a specific population (in this case, teachers who worked with students with LBLD) (Battaglia, 2008). Because this population of educators is so limited, it was necessary to deliberately choose participants for the study because their expertise was unique and central to the purposes of the research. While purposive sampling is subjective in nature, the limited population of teachers in LBLD programs warranted a need for purposive sampling (Battaglia, 2008). Therefore, it overrode the idea that “another expert would likely come up with different sampled elements from the target population in terms of important characteristics and typical elements to be in the sample” (Battaglia, 2008, p. 645). This is backed further by the notion that LBLD programs already maintain specific criteria in public schools, which correlates with the specific expertise necessary of the educators who run them.

The researcher could not find enough participants using purposeful sampling, and therefore employed snowball sampling. That is, members of this population were contacted and asked to identify other members of the same population to participate in the research (Chromy, 2008). The process continued until the researcher obtained a sample size of four; while the researcher sought five participants, there were no other willing participants and interviewing four participants is appropriate according to IPA criteria (Chromy, 2008). In sum, the purpose of this
research was best served by a small sample because the population is rare within the realm of education and thus serves to offer a wealth of information through in-depth qualitative data.

**Ethical Considerations**

In order to maintain the ethics of the study, participation in the research was voluntary, and there was an option for participants to withdraw from the study at any time during the research process. The researcher preserved the anonymity of participants and kept all documents, recordings, and electronic files secure in password-protected and/or locked spaces. The researcher preserved anonymity of all participants with the use of gender-neutral pseudonyms and eliminated all information that might have threatened this security. Follow-up interviews also took place to co-construct initial findings of the research and served to clarify the interviewee’s intention. These considerations aligned with protocol outlined and approved by the IRB.

**Data Collection**

In accordance with IPA methodology, the researcher collected data through semi-structured interviews, diaries, and electronic email to capture both the individual’s story and the researcher’s perception of the process; semi-structured interviews were central to the research and data collection (Oxley, 2016; Smith et al., 2009; Smith & Osborn, 2015; Young, 2016). A series of two to three separate interviews per participant took place; the first two were conducted in person, but due to time and distance constraints three interviews were combined as one. The third follow-up interview took place via phone or in person (Smith et al., 2009). These semi-structured interviews were preferable because they were flexible and allowed the researcher to adjust questions as appropriate throughout the interview; this made room for a deeper well of information from participants to emerge (Oxley, 2016; Smith & Osborn, 2015). Each interview
served a specific purpose: first to discuss the purpose of the interview and establish rapport; second to share experiences and answer more in-depth questions as they related to the research; and finally to follow up with member checking to share my perceptions of what was said and any additional thoughts from the participant (Carusi, 2016; Smith & Osborn, 2015).

The interview protocol questions were placed in logical order (saving more in-depth topics for later in the interview) and followed an open-ended format with follow-up questions and probes (Oxley, 2016; Young, 2016). The researcher set a target of 15 open-ended questions, using an iPad audio recorder to record the face-to-face interviews (at the discretion of the participant) because this record was objective and also allowed the researcher to focus on the conversation (Smith et al., 2009; Smith & Osborn, 2016; Young, 2016). Smith & Osborn (2015) recommended funneling, which starts with questions regarding general views presented prior to asking more specific questions; this was an effective method because the researcher was less likely to sway or influence the participant’s answers. Protocol questions were constructed with research questions in mind in hopes that participant answers would outline experiences that answered research questions indirectly (Smith et al., 2009). Sample interview questions to put the participants at ease included: *Can you tell me how you came to teach students with LBL Differences?*; *What comes easiest in your work?*; *Why do you do this work?* Sample interview questions that aligned with the research questions and theoretical framework included: *How would you describe metacognition as a tool for learning?*; *If you could experiment with anything in the classroom (risk-free, no budget limitation, etc.), how would you exercise this opportunity?*; *Are there any writing or strategy techniques you would explore?* (See Appendix B).

While the interview protocol was used as a reference throughout the interview, questions were at times reworked, particularly after the first set of interviews, to give the conversation flow
and acquire in-depth responses from the participant (Rubin & Rubin, 2012). Prior to agreeing to the interview, the purpose of the research was explained so that participants were able to make an informed decision regarding whether they wanted to participate. For this reason, the interview protocol questions were shared with the interviewees, and the objective of the study was discussed and any concerns responded to so that the participant and researcher were able to freely co-construct experiences that occurred in the classroom (Seidman, 2006). After interviewing, the researcher maintained a reflective diary to reflect on her personal role in the process (Oxley, 2016; Young, 2016).

**Data Analysis**

In accordance with the qualitative and interpretative nature of IPA, an inductive analysis of the data was used to formulate conclusions and report on emerging themes (Young, 2016). The researcher transcribed the interview using a transcription website (www.Rev.com) and coded the data using the MAXQDA software. Once the interviews were transcribed, the researcher engaged in member checking by allowing the participant to read and review the transcripts to correct or amend. Using Creswell’s (2013) spiral approach to data analysis, the researcher collected data, managed it in MAXQDA and Google Docs, recorded memos, and coded data accordingly. The researcher read the transcript twice before annotating the margins of the transcript and marking repeated words and ideas that seemed to “stick out” in chunks (Creswell, 2013; Seidman, 2006; Smith & Osborn, 2015). Once familiarity was established with the data, the researcher engaged in free textual analysis; these “initial notes are attempts to document sense-making” and highlighted what is especially important to the participant’s experience (Smith & Osborn, 2015, p. 41).
During the preliminary analysis, the researcher took a holistic coding approach with the data, capturing categories that stood out (Miles, Huberman, & Saldana, 2014). The researcher applied In Vivo coding, using words that were repeated throughout the interview to generate overall patterns (Miles et al., 2014). These initial notes were translated into possible themes that need more examination, and were written as a chronological list (Smith & Osborn, 2015; Young, 2016). This list of themes were clustered and segmented in an attempt to find patterns that could eventually be labeled as superordinate themes and examined further (Groenwald, 2013; Smith & Osborn, 2015; Young, 2016).

MAXQDA software was used to color-code and group the transcript according to major categories because it is a more efficient means of highlighting the interview transcript (compared to analysis by hand); the codes can be better organized and are visually appealing on the computer. Additionally, MAXQDA has extraction capability that will allow the researcher to separate the data according to each code, and further determine appropriate themes for the research. Annotations that summarize, paraphrase, or identify connections between the researcher and the information will serve as a vehicle that collects impressions of the data (Smith & Osborn, 2015; Young, 2016). The researcher engaged in member checking by sharing themes and findings from the data with the participant. In addition to offering this information, the researcher offered the participants an opportunity for discussion to co-construct understanding of themes.

During the second cycle of data analysis, the researcher organized the information across all participant data, seeking common themes or patterns (Miles et al., 2014). After the data was extracted according to code, the researcher analyzed the data once more to note any recurring themes or ideas across all participant data, and cross-checked this information with the initial
data. Throughout this analysis process, the researcher maintained a reflective journal to document personal observations and responses to the entire process to preserve the validity of the research process.

**Procedures**

The procedures of this study were guided by open-ended research questions that reflect key concepts of Borkowski’s process-oriented model of metacognition (2000). First, the researcher obtained IRB approval. Prior to obtaining signed consent from each participant, the researcher informed them about the purpose of the study and answered any questions the participant had. Prior to data collection, interviews were scheduled by phone or email at a mutually convenient time in a location of the participant’s choosing. The third follow-up interview was scheduled at a mutually convenient time via phone or Skype (per participant’s choosing). Following Seidman’s (2005) model of in-depth phenomenological interview, each interview served a specific purpose: first to discuss the purpose of the interview and establish rapport (interview questions were shared with participants at this time); second to share experiences as they relate to the research; and finally, to follow up with questions or themes (Carusi, 2016; Smith & Osborn, 2015). After each interview, the researcher reflected on the experience in a reflective diary. After collecting data from all participants, the researcher transcribed the interview using www.Rev.com. The transcripts were shared with participants for an opportunity to review and revise as necessary. The researcher read the transcript, and annotated the margins according to free textual analysis. Categories, repeated words and ideas were written down in list form according to InVivo coding to get a general sense of the data. Next, the researcher uploaded the transcripts to MAXQDA and color coded the transcript according to patterns and superordinate themes. These codes were extracted and data were
collapsed into subordinate themes. Commonalities in findings were applied across all participant data and shared with participants, who were invited to provide input at their discretion.

**Trustworthiness Statement**

Reliability and validity are paramount to trustworthiness, and especially important given the high level of subjectivity inherent to IPA. According to Smith (2011), transparency through strong data collection (more than one method) and reflection of the interpretative process is essential. The transparency that is resultant of the researcher's own interpretative process, in addition to the voice given to participants, is one of the unique aspects of IPA. “Validation has been cast within an interpretive approach to qualitative research marked by a focus on the importance of the researcher, a lack of truth in validation, a form of validation based on negotiation and dialogue with participants, and interpretations that are temporal, located, and always open to reinterpretation” (Creswell, 2013, p. 248).

The credibility of this study is determined by ongoing and open dialogue that is supported by continually clarifying researcher bias, triangulation, and member checking (Creswell, 2013). The positionality statement and reflective journal will serve as a vehicle for the researcher to determine biases before beginning the data collection process, and then continually checking in to reflect on the process in an open and deliberate fashion. Additionally, the three interviews that are part of the IPA interview process will allow for sustained engagement with participants. This process supports member checking during the third interview, which allows the researcher to check in with participants to determine their perspectives regarding credibility and validity of how information is understood by the researcher.

Transferability was accounted for in the IPA study through the idiographic focus because the researcher used thick description. Thick description offers detailed descriptions about the
participants and setting so that the readers may transfer this information to other arenas that present similar characteristics (Creswell, 2013). Additionally, thick description served to embody a larger special education population; while students with LBLD present with an extremely complex learning profile, they have a language problem and findings can be transferred to students who present with a disability that may not be language-based, specifically. It will also enable the conclusions of this study to transfer to other contexts because understanding how students learn and monitor their learning through metacognition and self-regulation is an elusive element of education that impacts all learners and which is particularly important in LBLD learning processes.

**Limitations**

There are several limitations and restrictions that may affect research study outcomes, including sampling, the theoretical framework, and the hermeneutic and idiographic influences of IPA. Purposive sampling is appropriate given the restricted nature of population size; however, it may be argued that another expert in the field may select different criteria to identify appropriate participants according to different characteristics, thus making the sampling subjective (Battaglia, 2008). Additionally, the researcher is a humanities educator within an LBL program in a public school of a suburban community, and she therefore possesses inherent bias regarding how participants are selected. In this context, one may argue that transferability is only applicable to like institutions where districts possess the privilege and resources to support this kind of substantially separate program.

The measurement and identification of processes within Borkowski’s process-oriented model of metacognition (2000) may be flawed because metacognition, motivation, and learning (particularly among students with LBLD) are complex processes that cannot be separated within
themselves, let alone in conjunction with one another (Borkowski et al., 1983; Borkowski et al., 2000; Paris, 1990). Furthermore, this theoretical framework has limitations in regards to how learned strategies, metacognition, and motivation are accurately measured, particularly because metacognition and self-regulation are so unique and specific to the learner (Borkowski et al., 2000). Metacognition cannot be measured reliably because it is a complex internal process that people are not necessarily aware of or able to explain (Borkowski et al., 1983; Borkowski et al., 2000; Paris, 1990). Motivation is also open to interpretation, and while the research seeks to understand how educators perceive metacognitive and self-regulatory instruction, their interpretation of metacognition, self-regulation, and motivation may be different from across participants with different positionalities. For example, the way students use language to mediate awareness in metacognition may look different from an educator born in another generation because their language has been influenced by technology and the various mediums used for communication.

The hermeneutic aspect of IPA is often critiqued because it has the analytical and interpretive potential to draw an individual’s story away from its original or intended meaning (Pringle et al., 2011). IPA is open to interpretation by design, and researchers are encouraged to go beyond what is apparent on the surface; for this reason, co-constructed research and follow-up interviews (where research is shared) are embedded into the research process (Carusi, 2016; Pringle et al., 2015; Smith, 2017). While there is a possibility that researchers can draw away from the words or intentions of the research participants, follow-up interviews, member checking, and co-constructed research served to clarify the interviewee’s intention.

IPA emphasizes the importance of an idiographic focus, and this work is intended to reflect some of the experiences of four participants who experienced the phenomenon under
study. Critics argue that the idiographic influence of IPA causes studies to be susceptible to bias because the interpretation is so subjective; this makes it difficult to “establish which variables are important, especially given the small numbers advocated for most IPA studies” (Pringle et al., 2011, p. 21). For this reason, it was especially important to incorporate direct quotes and metaphors to support analysis and findings so that an in-depth, thickly descriptive account of the individual’s unique story may be addressed (Pringle et al., 2011).

Conclusion

IPA requires “more explicit detail regarding the commitment and rigour with which the study has been carried out” (Pringles et al., 2011, p. 23). As a result, ample time spent on emergent themes, direct evidence from the participant, and coherent explanation of the research process and how it is interpreted allowed the researcher to adequately align findings with the transparency necessary to highlight the unique stories and experiences of others. Combining analysis with direct quotes from the participants, in addition to a trustworthiness statement that outlines how the researcher monitors interpretation, is crucial to the reliability established throughout the research process.
Chapter 4: Summary of Findings

Chapter 4 discusses the findings of this study, which explored the experiences of Massachusetts teachers serving a population of high school students who present with language-based learning disabilities (LBLD) in substantially separate public-school language-based learning (LBL) programs. These experiences involved how teachers perceived the way their students developed language skills, acquired knowledge, and expressed themselves through oral language and writing so they could negotiate the world given their learning differences.

This chapter begins with a brief review of the study’s context. The process by which interview participants were selected is detailed, study participants are individually introduced, and data collection procedures and analysis are reviewed. Common themes and subthemes are presented as well. The chapter concludes with a summary of research findings.

Research Question

The purpose of this study was to understand the experiences of Massachusetts high school teachers in LBL programs with regard to how they perceive metacognitive and self-regulatory instruction. The research also sought to understand how they made sense of those experiences as they related to supporting the writing skills of their students with LBL disabilities. The following question guided the research: What are the experiences of Massachusetts high school teachers in LBL programs with metacognitive and self-regulatory instructional strategies?

Site and Participants

General Demographics

As a group, the participants represented a broad demographic. Two of the participants were male and two were female. The participants ranged in age from the mid-20s to the late 40s. The teaching experience of the participants ranged from two to 28 years. Three of the
participants had not originally planned to enter the field of special education. All participants taught in some capacity within public school LBL programs, and also fulfilled other roles: three educators taught other classes and were also case managers for student teams in charge of writing and implementing individualized education programs (IEPs) and the other participant was also an administrator. While all four participants had Master’s degrees in education, their experiences and expertise working with this population of students were derived from trial and error, professional development, consulting, and prior experiences in private schools serving LBLD students.

Casey

Casey had been working as an English teacher for 17 years, first in a public school general education classroom for 11 years before realizing an interest in working with special education students. This influenced Casey’s move to a private school for students with LBLD, where many professional development opportunities and the structure of the school enabled the development of teaching practices that were “really valuable in my development of a lot of the skills I use now.” Casey moved on to teach English at an alternative collaborative program, which served special education students (including students with LBLD), prior to transitioning to a LBL program at a public high school three years ago.

At the alternative collaborative program, Casey worked with between one and seven students in Grades 9 through 12 who struggled with learning due to social-emotional needs, low cognitive abilities, dyslexia, or other factors that “compounded their ability to learn.” Casey cited collaboration with a speech and language pathologist and a social worker as one of the “best professional experiences” for developing as an educator. Casey currently taught two language-based English classes, served as a case manager to a caseload of special education students (not
limited to LBLD students), and supported general education inclusion English classes. Casey aligned this curriculum with the mainstream curriculum, eliminating extraneous reading in light of the pacing necessary in the LBL program.

**Ryann**

Ryann began working with adults with disabilities 13 years ago after graduating with a degree in American studies and looking for a career that seemed to be “making a difference in these people’s lives.” This inspired Ryann to go back to school for a Master’s degree in special education and begin a career as a special education teacher in an urban public high school, co-teaching inclusion history courses and serving as a special education case manager. Ryann transitioned to a suburban high school, working in a social-emotional and behavioral program before moving on to a work as special education case manager and strategies/academic support teacher. Ryann took on a role as a history teacher in order to be a “team player” and fulfill a “space that needs to be filled that someone feels like I can do okay on.” Ryann was currently teaching two LBL program history courses, an alternating life-skills course, a co-taught history and science class, and strategies/academic support. Like Casey, Ryann fulfilled roles beyond the LBL program as a special education case manager, general education support person, and facilitator of IEP meetings.

**Sam**

Sam had worked in education as a science teacher and administrator for 28 years in total. Originally graduating with a degree in biology, Sam started teaching at a private school for students with LBLD. Like Casey, this experience offered training that set the foundation for working with LBLD students in public schools today; likewise, Ryann had left this private school due to an unsustainable salary and started working in public schools at the middle and
high school levels. Sam worked in the general education classroom across all levels of classes (from AP to lower levels) and had been teaching a LBL science course that 10 years ago was spread across two years to allow for deliberate pacing. This two-year science course was created in response to poor test scores and four years ago was given the formal title of a “LBL class” as part of the district’s initiative to establish a comprehensive LBL program across all subject areas. Sam also had many roles, serving as an administrator and teaching three classes, all of which are LBL science classes.

Alex

Alex was a high school teacher in her second year as a special education teacher and her first year as an English teacher in a public school LBL program that had just been created by the district. Alex had a Master’s degree in special education and a Bachelor’s degree in English and secondary education, and started her teaching career working in a program for students who present with high-functioning autism. Alex’s supervisor, a former educator and administrator at a private school for students with LBLD, brought that knowledge and expertise to the public school district to create a LBL program this year. Alex’s supervisor provided training opportunities and consulting time to begin this program, and Alex now split time as an English teacher in the LBL Program, in the district’s autism program, and as a special education case manager and strategies/academic support teacher.

Data Collection Procedures

Study Context

The purpose of this study was to understand how metacognitive and self-regulatory teaching practices enhance writing abilities among students with LBLD and encourage the independence and communication skills that are necessary for academic success and self-
expression that transcends the classroom learning environment. This qualitative study employed an interpretative phenomenological analysis (IPA) methodology. IPA explores how others experience phenomena, and the interview process allowed the researcher to capture these experiences and make sense of how the participants made sense of an experience in a meaningful manner (Carusi, 2016; Oxley, 2016; Smith, 2011; Smith & Osborn, 2015).

**Recruitment of Participants**

The research sought to understand the lived experiences of educators within these LBL programs. Using purposeful sampling, an email containing a letter attachment (Appendix A) was sent to various Massachusetts public schools with LBL programs. These programs were identified through Google searches and recommendations by administrators who worked with the researcher, as most public Massachusetts high schools do not have substantially separate LBL programs. The researcher did not receive replies from any of the recipients who were emailed in the first round of inquiry.

Due to this lack of response and the small population of high school teachers who met the criteria for this study, the researcher employed snowball sampling for one participant who was recommended by a former colleague and met the criteria for this study. The researcher followed up with a formal email containing the letter attachment outlining what to expect during the research process (Appendix A), and the participant committed to the study after receiving this email. The researcher then requested and was granted permission by her school principal to reach out to the researcher’s faculty members to seek interviews after meeting to discuss the purpose of the study. Two faculty members responded to the call for participants and committed to the study.
The researcher then conducted another Google search and found that a public school had revamped its LBL program; as a result, the researcher contacted the school’s administrator, who answered this email and was able to recommend one of her teachers as the fourth participant in this study. The researcher then sent an email and the attached research letter directly to that recommended teacher and followed up with a phone conversation explaining the nature of the research after the participant agreed to take part in the research.

All high schools were in suburban areas of Massachusetts. During the 2017-2018 school year, the first high school site had a population of 922 students; the second high school site had a population of 1,346 students; and the third high school site had a population of 1,782 students (Massachusetts Department of Elementary and Secondary Education, 2018). The population of students with disabilities at the first high school site was 10.5%; the second high school site was 13.4%; and the third high school site was 15.4% (Massachusetts Department of Elementary and Secondary Education, 2018). The first high school site offered two LBL classes, while the second high school site offered seven LBL classes and the third offered four LBL classes.

The study involved four participants from three different public high schools. Each participant was assigned a gender-neutral pseudonym; to best preserve anonymity, each participant is referred to as female regardless of actual gender. Each of the four participants agreed to participate in one-on-one interviews, which were structured around the 15 questions in the interview protocol (See Appendix B). While experiences were unique to each individual, as expected in IPA studies, there were several commonalities in practice and experience among most if not all participants.

**Interview Techniques**
After the participants received information about the study, the researcher was able to follow up with a phone call or have a face-to-face discussion with participants to discuss the purpose of the study, clearly define expectations of the participants, chat about their current role (if applicable), and answer any questions they had. This contact was beneficial because it helped to put participants at ease. Upon the request of two participants, interview questions were emailed in advance of the interview.

Due to time constraints or distance, the first two interviews were combined for Casey, Sam, and Alex. Casey’s interview occurred in a local library in a quiet common area, Ryann’s interviews occurred at home, Sam’s interview occurred in her office after school hours, and Alex’s interview occurred in her classroom after school hours. All participants expressed some level of excitement about being able to discuss and reflect upon their work with another colleague outside of the fast-paced school day.

The researcher was able to utilize the semistructured questions with ease, and found they led to anecdotes and in-depth information that were geared towards both writing instruction and other educational components (e.g., comprehension, vocabulary understanding, and study skills) that drive instruction, and thus writing, organically. Upon the close of the interview, the researcher asked participants if they had questions or felt there was anything they needed to add; all said they did not.

Following the interviews, the researcher employed member checking by emailing the professional transcripts directly to each participant using an agreed-upon email address. The researcher also requested a date and time for follow up on their reaction to the transcript, which allowed the participants to determine how much time they felt was necessary to review the transcript before having a conversation. The researcher followed up over the phone with Casey
and Alex and face-to-face with Ryann and Sam to share overarching themes and codes. The researcher took notes on the feedback and elaborations provided by Casey, Ryann, and Alex; while they agreed with the interpretation of the findings and were comfortable with the transcript, they seemed to enjoy discussing the findings and making sense of this information through additional dialogue. This information was noted so it could be incorporated into further data analysis.

**Data Analysis**

The researcher uploaded audio files to Rev.com for transcription; the transcripts were then both printed and uploaded into the MAXQDA software program. The researcher read through the printed transcripts during her preliminary analysis, taking initial notes on categories and repeated words and phrases that stood out to her. These findings were then formally noted in MAXQDA, and the researcher read through the transcripts a second time to ensure a thorough analysis of emergent themes. These codes were exported to a Google Doc, color-coded according to each participant and organized across all participant data to determine common themes as well as unique and individualized themes.

**Discussion of Themes and Sub-Categories**

This section explores themes and sub-categories revealed through participants’ interviews. Following IPA methodology, the researcher sought to understand how participants’ perspectives and lived experiences contributed to emerging patterns within individual transcripts (Finlay, 2009; Groenwald, 2003; Smith, 2011). Below, the researcher will present a transparent sampling of data to exemplify how themes also emerged across all participant transcripts; these direct quotes will lend reliability and validity to the researcher’s final analysis (Pringles et al., 2011; Smith, 2011).
The four main themes that emerged from the data are depicted below in Figure 2. The first theme highlighted the perceptions of participants regarding how they believed students saw themselves, how this impacted their work, and how students’ self-perception did not always align with how a student’s progress was perceived by their teachers (participants). The second theme identified the importance of building metacognition through instruction, highlighting the practices participants used to effectively build this skill in the classroom. The third theme outlines language-based instructional methodologies that all participants felt enhanced instruction as it related to the central research question. The fourth theme notes the essential components for education in the LBL Program specifically, which were noted as necessary by all participants for student learning and growth with regard to metacognition and the writing process.

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*Figure 2. Themes and Sub-category*

**Student Perception**
All participants alluded to student perceptions as the link between performance and buy-in. As special education students, LBLD learners have some history of failure because their disabilities are central to the curriculum. This was acknowledged as a central component of student frustration and resistance to strategies and assistance. Furthermore, this leads students to complete tasks for the sake of compliance and a grade rather than for the sake of learning. This may occur because of poor self-esteem or because students do not understand how their work is wrong. Regardless, student perception is directly tied to performance to some extent, in most cases to a negative extent unless taught to realize otherwise.

**History of stigmatization and failure.** A poor self-image due to a fear of being “different” and a history of failure was noted as contributing to a lack of success. According to Casey, students may reject strategies and support because they “can be so self-conscious and be defensive and not want to make themselves look different.” Conversely, Casey noted, “Some students are definitely more aware of how things will make a difference for them,” meaning some students are able to build awareness and apply helpful strategies to academic tasks, notably writing. This is not applicable to all LBLD students, however. They attributed this to the “stigma” associated with special education, which leads students to shy away from “doing something that makes you stand out from everybody else.” Reluctant learners believe receiving explicit strategy instruction makes them different from peers without disabilities. As a result, they may resist accepting this assistance, even if it is more likely to help them improve academically so their work becomes more like that of peers who do not need these supports. These fears of standing out are rooted in the idea of being labeled “special education” or “different,” which comes from their history of enough failure in schooling to warrant the need
for specialized instruction. Ryann noted, “After years of failure and feeling inadequate, they kind
of are automatic to give up or to come to throw the towel.”

When asked what could be given to students, Ryann stated, “Confidence in their own ability,” which has been mired down by these past experiences. She noted that this has led to
students being “afraid of the page and afraid of the written word.” Ryann was not sure what
factors specifically led to this reluctance, but she attributed this fear to students feeling “they
don’t have the ability” because they are in these specialized classes. In a sense, students expect
themselves not to know how to succeed as an inherent result of their placement in LBL classes.
In alignment with Ryann’s observations, Sam noted this reluctance has reached its height by high
school, stating: “By the time they get to us sometimes, ninth and 10th grade, they’re frustrated.
They don’t believe anybody can help them. They’ve kind of dug their feet in. And getting past
some of that piece, I think is difficult.” She noted this was the most difficult aspect of the job
because students were far less likely to persevere if their self-perception was rooted in an
expectation of failure. With failure, students do not always know how or why they failed, which
influences motivation and requires a strong sense of self to figure out. This inability to
understand how to fix a mistake lends to a sense of hopelessness, where, as Casey put it,
“They’ve learned they can’t do it. It doesn’t matter what anybody does. They’re not going to be
successful.”

Completing tasks for the sake of compliance rather than learning and growth. Most
participants noted that students who were reluctant to buy in were typically more motivated by
the grade earned for attempting a task rather than by personally learning and growing or by
persevering through challenging tasks and ensuring their work was accurate. These participants
did not know whether this was rooted in a desire to complete a task for the sake of completion, if
they did not know any better, or a mixture of both. Ryann noted that at times she would receive a graphic organizer with information from sources that did not fully answer the questions. They took the “easier way,” paraphrasing students who said, “Let me just take what this website wrote, put it into my own words or hopefully put into my own words, but not really understand what it’s saying.” In line with this thinking, Sam noted that sometimes students were “just doing that thing so they get it over with. Like, ‘Okay, this is the assignment she wants me to correct it. I really don’t care how I did.’” Alex noted that, when assigning homework involving two-column notes based on a reading, “Their sole purpose is ‘What are the main ideas I can just jot down? And then be done with it?’”

Students do not always perceive themselves in the same light as their teachers. Students have a desire for independence; while some embrace the strategies, support, and pacing of the LBL curriculum, others reject these strategies, assistance, and deliberate pacing as inhibiting independence or as unnecessary. Thus, some LBLD students perceive their level of need differently from how they are viewed by educators. These student perceptions may remain in place when progress or the final product does not align with how the students feel they are progressing. Casey noted, “If a student is typically going to have the attitude, ‘I’m good. I’m fine. I got it,’ 15 minutes later you’ll see they clearly don’t.” Ryann noted similar findings, paraphrasing students saying “Yeah, I got it, I got it” when they were trying to show students where resources could be found. Casey did not feel this rejection was personal, but rather reflected how students truly saw themselves: “I’ve learned not to take a student rejecting what I want them to do or what I know will benefit them as them not believing it will help them.” In line with this thinking, Sam also noted that rejection of instruction “wasn't about me.” It was the teachers’ job to teach with consistency and have conversations with students around their
perceptions, bridging these perceptions without shoving how they saw something down their throats. Sam attributed this to a lack of understanding: “I think that not all the kids do understand how [strategies] benefits” them. When Alex was asked what students may think about the way she teaches writing, she responded, “They might say, ‘Oh, we’re going a little bit slow.’ But sometimes [they don’t have] that self-awareness of like ‘This is where you’re at.’”

**Building Metacognition through Instruction**

Despite the struggles noted in the first theme with regard to barriers to student learning, three participants discussed the importance of concretely showing students how their strategies worked, tying this practice into student buy-in, success, and increased independence. These three participants further noted that this practice changed student perceptions without forcing them to listen to their teachers tell them how something works. Students needed to see this for themselves, which takes time. This theme is divided into three parts: explicit teacher-led strategy instruction, the importance of demonstrating the benefits of these strategies in a concrete manner, and how student-centered approaches to these learning tools promote student buy-in.

**Practices for explicit strategy instruction and graphic organizers.** All participants shared their practices for strategy instruction, which helps LBLD learners take notes, answer questions, understand unknown vocabulary, rules, and writing. The interview questions were open ended with regard to strategy instruction, so while the strategies used were different among participants, a common thread was having some explicit strategy instruction that was designed to make students more independent when tackling certain tasks. Casey discussed using context strategies to understand vocabulary:
You get to a word you don’t know, you can cover up that new or challenging word with your thumb, read the rest of the sentence. Come up with your own word or phrase that’s going to help you get some comprehension out of it. That was the first strategy.

Sam taught “content through study skills” and strategies because “the thought was they’re not going to remember all the words, they’re going to remember [for example] a rule.” She said examples of this included “repetition, three-column notes, routine modeling, graphic organizers. So those are some of the bigger strategies for especially the English writing pieces.” Alex highlighted:

One of the biggest strategies across the board that we’re using are those two-column notes… When students read something, they’re given a two-column note sheet: Main idea, supporting details, and oftentimes that’s how we gather our evidence for our writing. So, on the top there will be a topic, or essential question and that is typically their final essay prompt after we finish writing.

Casey also reviewed note-taking strategies, stating:

In analyzing direct responses, we went over the note-taking strategies and how to look at the open response questions. Because the open response question is going to tell you what you need to take notes about, what you’re reading, so it gives them that focus.

Alex would go one step further from the notes, modeling self-talk by asking: “What else can we use from this prompt in our response to turn the question around? To use the language from the prompt in our response.”

All teachers cited graphic organizers as the most essential tools for getting students to organize their thoughts, generate ideas, and initiate writing tasks. All participants supplied graphic organizers to their classes for writing assignments. Casey noted they were most
important to writing “because they have to understand the task, and they have to understand what they’re going to put into it, what they need to explain.” Ryann felt graphic organizers “help the reluctant writer if the student is severely struggling of where to start, it can at least get them to put some words on the page which, oftentimes, that’s the hardest thing.” The graphic organizers allowed students to “get the meat and potatoes of what it’s all about” as opposed to getting writing that did not contain essential information from students. Ryann said they felt “even if it’s in their own words… I don’t know if they actually understood what this means.” Sam also provided organizers to her students, with key words embedded to give students focus for their writing. She noted: “I give them a graphic organizer to explain what I’m looking for. And then they could fill it in under that and just take out my words if they want. So I think that is huge for their writing.” Alex would first “brainstorm together as a group” before moving on to a “graphic organizer and outline depending on what the writing assignment is.”

**Concrete instruction to demonstrate the benefits of strategy use.** Students need to explicitly see how strategies benefit them before they start to employ them independently. Once students build this awareness concretely, they start to succeed. According to Sam, “Some students don't understand how they [strategies] help them yet” because “they need to see more success.” Casey noted, “When they can understand that they can do it, that I think helps them believe they can be more successful.” She noted that this process was gradual, citing that students felt hopeless and “unhelpable,” but “When you begin to turn that belief in themselves, bit by bit by bit, you can engage them more easily.” In line with this thinking, Sam stated, “I do think that once they start to see this success, I see a change in the kids… And they’re open to a lot more and they’re willing to volunteer more. They feel so much better about [themselves].” This involved trying multiple strategies based on how students learn and find success. Part of
building this concrete awareness was asking students for feedback and having conversations around their perceptions and what they thought was working. These conversations revolved around what they thought was helpful and bridged these perceptions by revisiting work and walking students through the process. Alex noted:

I think like that questioning conversation eventually it kind of comes out whether it's the perception piece or the “oh yeah, I'm all set with this. I'm finished”... [My] follow up questions kind of put them back in check sometimes.

In other words, having discussions around why something is or is not working for students helped them see what they needed. The nature of the LBL program classes allowed for these discussions and individualized levels of student understanding, or metacognition.

**Effective student-centered strategies for building metacognition.** Participants discussed several different approaches for building a sense of metacognition in LBLD students. They all alluded to the need for students to realize what helps them grow personally and the importance of time in developing this understanding. The role of the teacher in this development is guided, concrete practices that bring students to this realization (as opposed to “telling” them). Casey would use outside written responses for students to critique before asking them to shift to their own work, citing the importance that students “reflect on something that’s a little less threatening than their own thought process about themselves. Then once it’s clear what you’re going for in examining a thought process, to then look at something they’ve written.” She explained this importance by saying:

I think one of the things that allows students who may have not had good educational experiences to be able to practice that [metacognition] is using the same thought process on something other than themselves first, so that they can follow the steps.
By acknowledging a student’s likely hesitation to be self-critical, which is an essential component of metacognition, Casey found a way to make criticism less daunting by allowing students to focus on another piece of work before moving on to something more personal. With regard to strategies such as assistive technology, Casey took a similar student-led approach that was least likely to probe insecurities and make a student put up barriers and resist. She related an anecdote about a student who was:

Resistant about using assistive technology, but then through giving them a limited way to start using it, they would want to start using it. I didn't force them. I didn't [say] like, “You need to get in there now,” or make a big deal out of it. They were able to see the difference in what they produced before and after, so I didn't have to convince them. They convinced themselves, and if I was just going to be really forceful about it and not give them any wiggle room, then that’s just going to make the teenager be the teenager and not want to play along, because you’re telling them what to do.

Bringing students to this self-realization by analyzing the tools that worked for them and seeing how they were helpful was essential to building the metacognition they needed for independent learning.

Sam designed instruction through study skills. Her homework and study guides were framed with consistent language and strategies meant to prepare students for tests. Students reflected on what they knew by self-correcting this work and comparing areas of mastery with areas for growth in order to have an accurate understanding of how well-prepared they were for an exam. She stated that student study guides were corrected:
So that they can see the difference between what they said and what the answer is. So I think it gives them that instant feedback and like, “Oh, I was looking in the wrong place” or “I didn’t get that at all.”

Again, metacognition is having an accurate self-perception of one’s abilities, and self-regulation is the ability to troubleshoot what needs to change in order to improve upon this accuracy. The pacing of the LBL program classes allowed students to take time to self-analyze. Sam shared an anecdote along the same lines:

[A student] wasn’t doing any homework and failing… and then all of a sudden, she realized that she wasn’t doing well on tests, so she’s not using the tools. She all of a sudden started doing her work. And she realized that she can actually pass by doing the work that leads up. Eventually, I think that once she realized that: if she doesn’t put the effort into it, that it’s going to show on tests.

Learning was followed up with test corrections. This tied into writing because Sam started to ask students to compare their test essays with their essays to see what was expected for an answer. The students were expected to “determine what’s the difference between theirs and mine. So I don’t have them rewrite it but I have them look at what was the difference between them” so they could make improvements in the future. This, aligned with consistency, helped students improve their writing. This was supported with dialogue and verbal check-ins, where Sam was “walking around so I get feedback too,” reviewing corrections, and helping to bridge this understanding with students.

In line with bringing awareness to student attention in a concrete and explicit manner, Alex shared an anecdote about a successful strategy in writing when a student started “incorporating sentence frames, and strategies, and things that you don’t even realize that they’re
going to take with them.” When asked whether this student realized he was using these strategies without prompting, Alex stated, “I have brought it to his attention. And I actually pulled up his work at the beginning of the year, and ‘look what you’ve done.’ The student replied ‘Oh yeah, I guess that does sound better.’” This student did not realize his growth in writing compared to the beginning of the year, so sharing these improvements and helping students see how these tools helped them was essential to building metacognition. Alex also brought progress to her students’ attention by reviewing their work, saying “I will either read it back to them, or they read it themselves, and they’re even like, ‘Oh wait, no.’”

Like Sam, Ryann discussed the importance of self-reflection after a task has been completed, with an incentive to make corrections as part of the grade. Ryann would meet with students to “sort of do a self-reflection and a conference towards the end of the quarter” and admitted that, through these conversations, she would “hope they can internalize some things and help themselves for their report.” When asked whether students had internalized some of these realizations, Ryann noted “sometimes,” but stated this was assessed by asking students to “fill out this kind of check list or you can just make a note sheet for yourself… depending on the student’s comfort level.” Calling areas for growth to students’ attention, along with verbally presented discussion and student-directed areas for growth, have been important. Ryann would like to see more time for reflection, however:

I think it would be great if they could be able to reflect on their own education, their own learning style, their own kind of what works for them. I think many students can. I think many students that I’ve had with language based disabilities -- that’s actually been good for them.
It did not seem that students could be asked to reflect freely, however; there must be some concrete, before-and-after realization of what helps a student grow. In this sense, the pacing and explicit instruction to build this awareness were essential to the practices these participants employed in the LBL program.

**Language-Based Instructional Methodologies**

Although all four participants taught in different content areas (and in three different school systems), there were several common instructional methodologies that they employed in the classroom and found useful for helping LBLD students learn.

**Verbally process information.** All participants discussed a need to have both whole group and one-to-one discussions with their students to help them comprehend and understand both content and how to go about writing to demonstrate that understanding. The small class sizes and deliberate pacing allowed students to verbally process this information, which is necessary for understanding, building proper context, reminding students of pertinent background information, and letting students analyze their own learning process with the guidance and immediate feedback of their teachers. Casey spoke at length about the importance of verbally processing information as a small group and one-to-one with students. She said this was important because “I can prompt what they’re saying with things that help the thought process and keep them going deeper so that they can practice a more thorough writing process.” Casey discussed the need for reciprocal processing, frequent check-ins, and constant verbal processing in English class, particularly because experiences and themes are comprehended uniquely by each individual (LBLD or not):

If we’re not reading and processing and writing and processing what they have to do together, the content in literature involves much more of who they are as a person…
because of the personal interaction with the material, I think literature for students with language based issues is even tougher.

Ryann and Sam also highlighted the need for one-to-one check-ins. At the end of each quarter, Ryann said “I’d often call students up one by one… and kind of conference about the whole process.” Likewise, Sam verbally processed student work through discussion and reciprocal teaching:

“In Paragraph 2 have these words.” And then we had a discussion about how they related, and that helped her… we have conversations back and forth… And then I can have that conversation about, “Okay, so remember this activity in this activity? We do them so that you'll remember. And you can go back to them and refer to them.” Type things, or back to the study guide.

Alex also discussed the importance of discussion paired with writing, to ensure student understanding and to help students reach further and challenge themselves with detailed explanations and expressions of self through writing. This was particularly important when verbal demonstration of knowledge was an area of strength:

What I really like to is one-to-one conference with each of them. So, touching base, show me what you have, let’s talk about this. They'll ask any necessary questions… I think just providing that one to one and being able to talk with them … they really need that prompting to get that analysis. And higher-level thinking…. But once he's done that one sentence, he can sometimes be done. So, he has great thoughts, and great ideas. And I know he can expand on his writing. But sometimes he’ll stop at that one moment. So, it’s like, all right, I know there’s more there give me a little bit more. Tell me what your
thoughts and ideas are. Because as we said, when he’s talking about them, and he’s in oral discussion, he’s fantastic.

**Examples and models.** All participants noted the importance of breaking material down into small components using verbal explanations so students could understand how to approach a task. All mentioned scaffolding, breaking a task down into chunks for greater understanding (whether through discussion, organizers, etc.), as essential to working through the writing process. The benefit of scaffolding is that it can be intensified or scaled back based on the individual learner’s needs. Ryann said she asked students to write a compare and contrast paper “where again there’s different levels of scaffolding of how much they want to do it on their own versus how much they need the support.” The graphic organizers that Ryann offered varied according to need and how much a writing assignment needed to be broken down so a student could complete the task. Casey noted this support through conversation was important because “I look at that as that might be an extreme piece of scaffolding, that I’m more confident can be cut back over time because I can break down the steps and what I expect you to write or type on your own.” Three participants discussed the importance of explicitly walking students through each step rather than assuming they understood each step independently. Casey said, “Just to show them the steps that they’re going to have to go through,” and Ryann said, “They’re going to talk about each step.” Alex noted that, particularly with formal writing assignments that are complex and lengthy in nature, “With a longer term essay like this, that they have a lot of time to work on it, I break it down by section… we break everything down. And it’s, they present very much is that they understand it.”

Three participants also noted the importance of not only explaining each step, but also showing students each step (and the final product) through exemplars and modeling. Not only
did this help students understand their tasks, but it also ensured they were employing proper techniques in writing so that their own work could serve as an example for future assignments. Sam noted:

I think adding models is huge. I think I’m getting more out of kids in terms of writing or being able to take a test or writing a lab report because I’m modeling for them what I’m looking for. So that then when they do the next one [assignment] they have something to go back and look at.

Casey said:

[I] wanted to make sure that the explanation there was a really good clear example because when we get to the last four chapters, I’m going to expect that they’re going to do something like this from examples they pick out of a chapter. I told them today, “You need to have these good examples in your notes” [to reference at a later time].

Alex also liked to show students examples and would constantly review and revisit them in class: “I’ve shown them more examples. I’ve shown them different things. And they seem to know when it’s broken down, like that’s the focus. And we review it briefly.”

**Vocabulary support.** As noted in Chapter 1, LBLD students do not have the expansive vocabulary that a typical learner uses to retrieve the background information needed to comprehend or make connections to a concept. LBLD students also demonstrate difficulty using rich language to express their understanding and thoughts, notably in writing. Participants expressed how they supported these needs in different ways: comprehension, writing, or transferring information (e.g., language from a study guide is consistent with the test). With regard to writing, Casey noted, “They’re so limited [with vocabulary] that it comes back to ‘good’ and ‘bad’” to describe a situation in writing. She went on to explain, “They can’t
categorize their own experience in really specific ways, that limits the repertoire of responses that they have, whether you’re trying to process literature.” Casey developed this in writing, explaining:

You’ve got your active vocabulary, words that you use, and we do these activities to expand your working vocabulary, the vocabulary you can understand but don’t use, just to try and get you to develop what you have to say more.

Casey noted that even with vocabulary instruction, “They might get the idea of the word, but they have no idea how to use it in a sentence.” To support this, Casey gave students “explicit practice” with writing using different vocabulary and semantic patterns so “they can see how they can take the same content that they have in their head and rearrange it different ways.” Sam supported vocabulary in writing by providing students with key words they should include in their writing: “I make sure that I give them the words and in order, so that they can keep themselves organized and then I give them a graphic organizer to explain what I’m looking for.” Similarly, Alex broke down writing prompts by looking at key vocabulary and modeling self-talk: “‘What does that word mean? Oh, well central- I know that means main character.’ I will circle a key word and then I ask them to give me a follow-up sentence on that.” It seemed most participants were looking to expand vocabulary for rich description and also to incorporate key words specific to the assignment to ensure students responded with relevant and specific information.

With regard to supporting the comprehension or understanding of a task, most participants noted the need to structure discussion and explicit instruction around supporting vocabulary. Like Alex, Casey would focus on key words from questions to find textual evidence, asking students: “Let’s go back into here and look for vocabulary that’s similar or somehow
related.” Sam talked about how students did not always transfer the knowledge of one word to a different word that had the same meaning:

If the words weren’t exactly the same, I had to encourage them to say, “It means the same thing”... I think the way that some things are worded, if it’s not exactly how I used to word it or, something to that [extent], I think maybe they didn’t understand the question.

Ryann noted the need to teach “kids to read nonfiction text and to answer questions based on that text, and to work on their vocabulary skills,” focusing on “10 vocab words per chapter. And we’ll start off the chapter with that, where they have to have their [vocabulary] word, their example, and their picture” in a three-column note form. Casey would also “preview the vocabulary” in reading, but she noted this can be difficult because “You can’t preview every vocabulary word. You can’t give vocab ahead of time because you’re not going to get anything else [done given] as long as it takes these kids to do anything.” To work with this, Casey would also discuss words while reading, “do some of those things on the spot,” and also teach “students how to use context clues strategies, contextual reading strategies.” Casey also discussed the lack of background knowledge and vocabulary because of nonliteral words and expressions: “It’s not just individual words and vocabulary. They don’t have the background knowledge for idioms, typical things people will say.” She would play games such as Pictionary based on these idioms. She added:

It’s not that they don’t have prior knowledge that they can relate to. It’s not that they can’t have some strategies that help them develop some comprehension and understand some vocabulary, but just the comprehensive nature of interacting with literature and generating work because of it is overwhelming.
In other words, the “personal interaction” inherent to an English class made the challenge of understanding vocabulary even more necessary. This was raised as an area of focus and challenge among all participants because of understanding material, requiring explicit instruction for key concepts, incorporating new vocabulary into writing and dialogue, understanding non-literal word and phrases, and balancing this with the pace of the curriculum.

Multimodal instruction. LBLD students need multimodal instruction, which includes visuals, audio/video clips, kinesthetic activities, and overall multisensory instruction that supplements both verbal and written language. This ties in to the typical strengths of students with LBLD because perceptual reasoning abilities allow students to reason with information through visuals. Participants also stated that color-coding was a popular tool that allowed students to visually understand whether their writing was appropriately organized and structured. Casey cited an example where students had information from a grade-level novel “presented visually like that [pyramid notes] to help process the information.” Ryann would present information in a variety of ways, “whether it would be visuals, whether it would be video clips, whether it would be different assignments, more hands on assignments, group activities, PowerPoints, just different things like that, different ways to do it.” Her instruction was supported through multisensory methods and strategies with “words and visuals that then I’d back up with video clips and then there was graphic organizers with note sheets would be taken about major points.” Likewise, Sam would “have pictures that show every single step [of a project] so they see the visual and they see the words.” Her students were also allowed to showcase their knowledge in this fashion, demonstrating knowledge “through pictures and PowerPoint that they’re going to create, that they can actually build it, build that protein.” Alex
also noted the importance of “different modalities, and different ways of teaching things I feel like is the way to really reach them.”

With regard to incorporating visual components in writing, Casey would teach sentence structure:

One color is your subject, one color is your predicate, and the third one is the other information, so that you could say that other information could be a prepositional phrase, and how do you write this sentence with that prepositional phrase in other places?

Both Casey and Alex, who were English teachers, used color-coding for the editing process. Casey said, “They could use the highlighting tool and show me where’s the introduction, where the body paragraphs, or where’s the analysis, where’s the conclusion.” Alex said that students could also pick their writing apart more specifically, by “color coding topic sentences, transition words and phrases, supporting details, and that elaboration and explanation of evidence. And so, that way for the visual learner, [using color coding] instead of a checklist” helped students slow down and really evaluate their work according to a visual tool that was easier to understand than the written word.

**Essential Components of the LBL Program and Classroom**

Lastly, all participants discussed components of the LBL program and classes that aligned with the specific needs of LBLD students. Pacing and flexibility, time for repetition, and extra time for students to process information were necessary for teachers to employ strategies they mentioned as effective for LBLD learners.

**Pacing and flexibility.** Pacing and flexibility were necessary for students to process and acquire learning skills and strategies in LBL programs. Casey had experience in both small group and general education English classes and was able to compare pacing of the two in her
reflection on LBLD student needs. She stated, “I had more flexibility to process [information] effectively with the student in the small group class.” She also said that the mainstream classroom was a “faster paced class” where students “produced five paragraph essays” regularly; comparatively, “we only did one because it took so damn long.” She went on to explain that editing “was about three days’ work, alternating back and forth with him and the other student to try and combine sentences, eliminate repetition, and just tighten things up.” Alex had similar experiences with the writing process:

There’s a reason why we are repeating and going at a slower pace…it’s [writing is] typically around five [classes]. So, sometimes we’ll draft the first body paragraph. And then I’ll say, okay, do two for homework based on what we did in class, model that same kind of format. So, it really depends but… I’d say probably like five classes…even if it’s just like they have everything done and we take a class or half a class to just touch base, peer edit, something like that. Even with a finished product or rough draft.

Casey also stated that pacing the class so students could truly acquire skills and strategies for learning allowed them to eventually transfer into a mainstream class if they took complete ownership of their learning tools: “The time that she was given to process and interact with it [reading and writing] and have success with it’” allowed a student to transfer into the mainstream English class with success. Sam was also able to incorporate deliberate pacing into instruction because the science class was extended over two years:

I’m able to do more activities, more hands on. Trying to present it in different ways so that I hit [reach] every single kid… We’re able to spend that time and do multiple of activities as opposed to just doing one and being done and like, “Okay, hope you get it”... It’s definitely a different delivery rate because of their processing.
Sam also mentioned the importance of repetition, especially with so much complex information, which is allowed because of the pacing: “I think that if you’re not bringing those pieces up, those little important pieces, they’ll forget it. And the more you bring it up, the better. The more you use it, the better.” Pacing allows for frequent review and repetition, as well as for learning to be delivered in a variety of ways with enough practice and reflection to build metacognition and help students learn.

**Big picture ideas and concepts over small details and facts.** Ryann and Sam, who taught history and science courses, discussed the need to focus on big-picture ideas as opposed to small concepts and details for the sake of the curriculum. This may not be applicable to English teachers because the curriculum frameworks are the same for Grades 9 and 10 and for Grades 11 and 12; all were closely aligned with regard to what needed to be covered across a variety of different texts (theme, figurative language, specific types of writing, etc.). Ryann stated:

> Unlike a lot of history classes, I’m not just going to list every battle. I’m going to put the ones that are the most important… I feel like, is it more important that they know the different names of the people in Israel or is it more important that they know the bigger ideas, so that’s kind of how I would approach my own language-based class versus the mainstream.

Sam also stated: “I make sure I focus on what they need to know. I try not to go too far into content that I could, to make sure I’m not confusing them and that they can hold on to what they need to know.” Mastery of essential concepts through strategy instruction, while removing extraneous details in the interest of pacing as well, were noted as essential for student learning by these participants.
Small class size. Participants noted both positive and negative aspects of the smaller class sizes that are inherent to LBL programs. State law mandates substantially separate special education classes be no more than: 8 students with a certified special education teacher; 12 students if the teacher is supported by one aid; 16 students if the special education teacher is supported by two aids (Massachusetts Department of Elementary and Secondary Education, 2018). One positive aspect of the smaller class was individualized attention for writing and comprehension, as well as access to teachers who understood their difficulties and strengths. Casey stated:

I don’t think I would have been able to work as effectively with them [students] as I can now [in the LBL Program]. I think it would be a disservice if those students were either placed in the mainstream or didn’t have a real experienced person with them.

She recalled one student who had been appropriately placed in the LBL Program, and said that if this student had been in mainstream English all along:

She wouldn’t have had the attention with the writing, let alone the reading… she wouldn’t be able to keep up with the writing demands. She wouldn’t feel comfortable participating in group activities, so she would not be a good fit in a class like that.

Another positive aspect of smaller classes was that students could receive individualized attention in order to learn and see how strategies worked for them specifically. Casey stated: “If it’s students who are resistant to strategies of any kind, I’ll even do the brainstorming piece one-on-one and talk about it and write stuff down.” This would not have been possible in a large, regular education (mainstream) classroom. Likewise, Sam felt the smaller class allowed teachers to “figure out what practices work best with kids.” Alex stated, “there’s not a one-size-fits-all
program” and the smaller classes were “just providing different opportunities to meet different learning styles.”

There were also negative aspects of the smaller class sizes. Ryann stated that, specifically in history, “maybe more of a diligent student tries to push themselves to get into the mainstream history and typically does so without a problem” and this can, at times, create a class of students with “limited ability and some that have limited desire.” This can impact the quality of the class. For example, Ryann said that if some students did not do their homework:

If you had a bigger class, you could have had three kids working on the same one so if one of them didn’t do it, you had at least two that could still get the flow of the lesson, instead of completely kill the lesson.

Alex also noted that different strengths and weaknesses among learners, even if they all presented with LBLD, could be difficult to cater to when the class size is so small. She gave an example of one class:

In terms of levels of comprehension…. They’re all at different places. So, some at the basic recall of the who, what, where, when, that can sometimes be challenging. Whereas others have that completely mastered, and they are on the tell me why. So, that level in terms of comprehension- I would say in terms of writing ability even- just being able to engage in the writing process [is difficult].

Alex had a class size of three students, which could be attributed to the different population of LBLD students each year. When asked to compare a substantially separate class of three to a class of 10 (for example), she noted:
I think sometimes when you have that group of 10… even when you find those commonalities, then you’re able to group them and it’s almost like stations you can address. Whereas when it’s the three sometimes two are here and one is here. Having to find “that third or fourth way” to present information to a student in order to understand, “that’s where the struggle comes in a little bit,” according to Sam.

To conclude, the small size of these classes could both benefit students and negatively impact pacing and social grouping. Because there were inconsistencies in population each year, there was no defined class size or perfect criteria for students in an LBL program.

Conclusion

This study focused on the experiences of high school teachers in LBL programs across three suburban high schools in Massachusetts. Two English teachers (also special educators), one history teacher (also a special educator), and one science teacher (a general educator and administrator) provided information about their experiences teaching students in LBL programs with regard to writing instruction and overall learning. Each individual transcript was coded according to emergent themes, and these findings were compared across all participant transcripts to determine four common, overarching themes.

Each participant’s voice was presented in a distinct and clear manner to support the findings of the following sub categories: history of stigmatization and failure; completing tasks for the sake of compliance rather than learning and growth; students do not always perceive themselves in the same light as their teachers; practices for explicit strategy instruction and graphic organizers; concrete instruction to demonstrate the benefits of strategy use; effective student-centered strategies for building metacognition; verbally process information; examples and models; vocabulary support; multimodal instruction; pacing and flexibility; big picture ideas
and concepts or small details and facts; small class size. These sub-categories were grouped into larger overarching themes: student perception; building metacognition through instruction; language-based instructional methodologies; essential components of the LBL Program and classroom. These findings as they relate to the research literature and Borkowski’s process-oriented model of metacognition (2000) will be explored in chapter 5.
Chapter 5: Discussion of Findings and Implications for Practice

There is a need to understand how high school students who present with language-based learning disabilities (LBLD) incorporate metacognition into their writing practices if educators are going to help the many students in our schools who have learning disabilities. There is a conflict between metacognition, what students use in order to anticipate how they communicate and write, and self-regulation, which is how students use strategies to make sense of their writing and evaluate their learning. Self-regulation competes with executive function skills and the language necessary to navigate tasks, both of which are significant weaknesses for LBLD learners. Strong metacognitive awareness correlates with effective writing and communication skills in students. Metacognition allows students to set goals, plan, monitor effective strategies, and adapt as necessary; this allows students to independently monitor themselves throughout the writing process (Roberts et al., 2014). Research has found that writing performance among students with learning disabilities improves through “explicit, interactive, scaffolded development of powerful composing strategies and strategies for self-regulating the writing process” (Mason et al., 2011, p. 20).

However, minimal research attention has been directed toward the correlation between independent writing abilities and the practices of metacognition and self-regulatory learning among high school students with LBLD (Cook & Bennett, 2014; Rouhani et al., 2016). The goal of this study was to understand how metacognitive and self-regulatory teaching practices enhanced writing abilities among students with LBLD. Understanding this will encourage the independence and communication skills that are necessary for academic success and for self-expression that transcends the classroom learning environment. An additional purpose of this study was to understand, from the perspective of educators, how strategies are embedded in
curricular instruction to enhance metacognition. The following research question guided the researcher’s effort to understand the individual experiences of educators working with this population of students: What are the experiences of Massachusetts high school teachers in Language-Based Learning (LBL) programs with metacognitive and self-regulatory instructional strategies?

The theoretical framework guiding this study was Borkowski’s process-oriented model of metacognition (2000). This theory focuses on the use of specific strategy knowledge across multiple contexts to build the self-awareness, motivation, and enjoyment of learning that is necessary to make students with learning disabilities metacognitive learners through self-regulation and strategy use (Borkowski et al., 2000).

**Areas of Vulnerability and Limitations**

The researcher took steps to ensure credibility and trustworthiness in this study. However, limitations and areas of vulnerability emerged throughout the research process. A primary concern is that there was no single consistent title for students with language-based learning disabilities, nor was there explicit criteria outlining this disability. Therefore, it may be a limitation that the researcher was not able to collect information when students were identified using other terminology. In the Massachusetts area, however, many neuropsychologists and both public and private schools use the term *language based learning disability* to refer to these students.

In addition, the work experience of the researcher may have impacted the study because the researcher is an educator who is working with students in a language-based learning program at a public high school. It is possible that personal biases or familiarity with instructional practices may have influenced how the researcher interpreted participant responses or led the
researcher to fill in information with personal areas of understanding. Finally, the researcher had worked with two participants, and it is possible that their answers were influenced to some extent by their close working relationship with the researcher.

**Overview of Findings**

The researcher identified several findings that were consistent among the participants:

- Each participant at some point alluded to poor motivation or understanding among LBLD students.
- Each participant acknowledged the need for explicit and personalized instruction.
- Participants found it beneficial to show students how strategies worked for them in order to promote buy-in and build a sense of metacognition in LBLD students.
- Each participant believed that she needed to help students become aware of their own thought process verbally, in addition to reading/writing/visuals.
- Each participant noted the importance of language/vocabulary support and the need for visuals to help students understand.
- Each participant noted the need to bridge perceptions between herself and the student with regard to the effectiveness of strategy use and growth.
- Each participant described flexibility as essential to providing proper instruction to LBLD learners.

**Discussion of Research Findings in Relation to Literature Review**

This section relates the findings to research that was discussed in the literature review. Each subsection connects the experiences of participants with findings from the literature.

**Student Failure**
Students most commonly cite physical factors such as fatigue, effort, interest, difficulty of a task, help from others, and luck as reasons why they succeed or fail (Borkowski et al., 2000). This finding ties into the literature because many LBLD students enter high school with a long history of failure due to an overall inability to know how to self-improve. Teachers noted a reluctance to learn, which resulted in poor motivation, sensitivity to critiquing, and poor buy-in. This seems to result from experiences that have reinforced a negative sense of self, particularly with regard to academic ability, and has lent itself to feelings of helplessness that were noted by participants (Borkowski et al., 2000).

Participants also noted a lack of buy-in regarding the use of strategies, attributing this to a history of failure and to a sense that students felt they were capable of completing a task without the strategies or assistance that their teachers perceived as necessary. This aligns with the literature because LBLD students tend to over-rely on their prior knowledge, overestimate their personal abilities, and interpret ideas based on their personal feelings and experiences rather than on the information presented to them (Danoff et al., 1993; Kaldenberg et al., 2016). Furthermore, LBLD students struggle to ignore extraneous details that distract from the core meaning of a text and to understand implicit or abstract concepts (Boyle et al., 2016; Duke et al., 2014; Sun & Wallach, 2014). These tendencies inhibit comprehension and, as a result, LBLD students are likely to misunderstand information (Boyle et al., 2016; Duke et al. 2014). This not only makes it difficult for students to answer related questions, but also causes them to incorporate unrelated or insignificant information into their writing (Boyle et al., 2016; Duke et al. 2014).

Thus, it is reasonable that students feel they do not need the level of support or strategies offered to them, or that they may become resistant to teachers who are pushing them to participate in activities they do not see a need for. Students feelings of success and capability are
only met with greater disappointment when they do not see success even though they feel they completed the steps to deserve it. This creates a cycle where students do not have control of their learning and are unable to understand how to help themselves due to a history of failure and inaccurate self-perception of their work. Participants asserted this was one of the most challenging aspects of teaching because they needed to be sensitive to these needs while also teaching students to be independent learners. Finally, students may not feel they are capable of engaging in the learning process due to these factors and will prefer to complete an assignment for the sake of finishing it rather than engage in a richer learning opportunity.

Explicit Instruction

Participants also noted the need for explicit instruction to allow LBLD students to understand how a strategy works, internalize it, and use it independently. Students can become self-aware of their own thought process when the process for tackling a task is modeled, they can practice it, and they are given explicit feedback to determine whether their perception of how they present their understanding aligns with the specific goals of a writing assignment. As a result of the disability, LBLD students may not be self-aware enough to independently and accurately plan, assess, and revise their work. Therefore, focusing on how they will organize their writing, with explicit practice that involves questioning, sequencing, modeling, organizing, and scaffolding, is necessary (Swanson & Deshler, 2016). Students with LBLD do not acquire strategies to enhance metacognition and learning unless they are given detailed and explicit instructions (Danoff et al., 1993).

While instructional practices and strategies varied among participants, all of them emphasized the importance of delivering instruction explicitly. This included modeling self-talk, clearly breaking down each component of a task, and providing immediate and frequent
feedback to students through scaffolding and discussion during the entire learning process. Literature supports the need for this explicit instruction: students with learning disabilities can improve their writing through individualized attention that incorporates explicit instruction, such as scaffolded strategy instruction, to help students self-regulate during the writing process (Mason et al., 2011). All participants mentioned starting a unit with strategy modeling and guided practice (typically with the whole group) before moving towards a student-centered approach. Opportunities for reflection and revision were enhanced through independent practice and supported with immediate feedback and language support (Mason & Graham, 2008). The nature of the LBL program provides students with small class sizes. Participants noted the need to break materials down in a concrete manner while conferencing one-on-one with students, during whole-group instruction, and providing individualized support and learning.

**Show Students How Strategies Work for Them to Build Metacognition**

One of the most prominent findings is that participants noted the need to bridge perceptions between teacher and student. Showing students how certain strategies, tools, and instructional methods were beneficial to them helped convince students to use these tools. This is supported by the literature because writing activities that incorporate self-assessment and encourage students to actively reflect upon their work help them determine whether the strategies and supports were useful during the process, as opposed to being surprised by the end result (Danoff et al., 1993; Joseph, 2010).

Participants also noted that there is no one singular approach or strategy that works for every student uniformly. The literature calls for individualized check-ins and student reflections. Additionally, explicit instruction about strategies needs to be used in context because generating ideas, applying proper writing strategies, and demonstrating an understanding of content-specific
material is difficult for LBLD students (Kaldenberg et al., 2016). Conversely, however, the literature is vague with regard to how specific this strategy instruction should be. There is no clear delineation between whether students should be instructed to use specific tools to approach a task or whether both educators and students should choose from among a variety of strategies to tackle a specific task. Participants, however, stated a need to offer certain strategies to tackle a task and then adjust if students show a lack of understanding the strategy or fail to complete a task accurately with the support of the strategy.

Explicit instruction for planning writing involves learning, using, generalizing, and maintaining strategies for achieving writing goals (Mason et al., 2011). Engaging students in the process and explicitly showing them how they are meeting their goals through strategy instruction builds motivation and a greater sense of independence. Goal-setting that involves explicit instruction and guides students to set specific benchmarks is a powerful tool (Danoff et al., 1993; Mason & Graham, 2008; Mason et al., 2011). Participants identified explicit strategies, such as rubrics, checklists, notes, and graphic organizers, that clearly outlined goals for learning during the writing process. When students are given the tools to know which strategy is appropriate for a specific assignment and see success, they are likely to be more motivated to employ these tools in the future (Dinsmore et al., 2008). Students must want to do well, understand that their success is dependent upon themselves, know how to use strategies that will help them succeed, and see that they are capable of completing the task presented to them (Borkowski et al., 2000). Students must be given instruction and opportunities to do well, in addition to being made aware of this growth, in order to succeed.

**Verbal Processing**
Participants noted the importance of verbally processing information through whole-group and individualized instruction to help students generate content and ideas before engaging in the actual writing process. According to Joseph (2010), mental modeling and think-aloud techniques support the language needs of LBLD students. The complex and language-laden process of writing can be challenging for them, particularly when most of the process is mental and internalized. Students also need language to articulate the executive function skills necessary to navigate through this complex process; verbal reasoning and modeling tap into the typical strengths of students (verbal comprehension) while supporting language and executive functioning, which are typical areas of weakness (Borkowski, 2000; Westby, 2014).

Reciprocal teaching is a form of verbally processing information because teachers model a process and ask students to assume that role once they understand their task. Individualized conferencing aligns with this practice because the process has already been modeled and students are asked to apply it to their own work (or, for Casey, with others’ work to make the task initially less intimidating). Therefore, reciprocal teaching gives students steps and feedback to refer to as they plan for and work towards a writing goal (Joseph, 2010). Discussing effective techniques for self-regulation and thinking, along with verbally reflecting on effective tools, personalizes the learning process and improves student understanding (Joseph, 2010). In sum, participants noted that students were better able to understand a task when they could verbally process their thoughts, as this practice helped students become aware of their own process through a medium of strength (verbal comprehension). Additionally, participants found this necessary for students to navigate an otherwise mysterious thinking process and improve their ability to self-regulate and make sense during the writing process.

**Language Support**
According to the literature, difficulty with vocabulary is exacerbated by weaknesses in three main areas: possessing knowledge of background information, vocabulary words, and working memory capacity; perceiving language correctly; and understanding words and abstract language with more than one meaning (Harris-Wright & Newhoff, 2001; Motsch & Marks, 2015; Troia, 2011; Wallach, Charlton, & Bartholomew, 2014).

Participants noted that the need for language support and weak vocabulary impacted comprehension significantly, which justified the need to provide and explain essential vocabulary words. Participants also noted a need to explicitly teach students how to apply context strategies to understand words because there is not enough time in a school day to go over every single word or idea that students do not understand. Students at the high school level are expected to maintain metalinguistic maturity, which is understanding that words and sentences can have multiple meanings. They are also expected to possess grade-level vocabulary, adjust their understanding of wording according to the context, and make abstract predictions based on concrete findings (Qualls et al., 2004). Students with LBLD have difficulty understanding even literal language, so the added layer of understanding nonliteral language makes it extremely difficult for them to access the grade-level curriculum without having a foundation of concrete words they can use to build an awareness of abstract language (Qualls et al., 2004; Wallach et al., 2014). The complex nature of the high school curriculum requires language with multiple meanings that builds on relationships and ideas that are themselves complex (Troia, 2011). Participants noted the need to take time to go over vocabulary, which ties into the literature because vocabulary knowledge, knowledge of background information, linguistic and metalinguistic abilities, and working memory capacity all contribute to comprehension (Harris-Wright & Newhoff, 2001; Wallach et al., 2014).
Participants also noted that limited vocabulary made it difficult for students to describe their understanding in writing. They addressed this weakness by providing and supporting specific language to help students explain their understanding. LBLD students lack the background knowledge and lexicon (vocabulary) to explain prior experiences in their writing (Motsch & Marks, 2015; Troia, 2014). This is a result of reduced language, processing speed, and working memory ability. These impairments are exacerbated by the demands and pacing of the high school curriculum. Critical thinking, abstract application, and detailed responses become more involved across a variety of disciplines, and LBLD students are expected to fill in the gaps of language by trying to build foundational literacy skills on top of these more complex language tasks (Wallach et al., 2014).

**Flexibility**

Through deductive reasoning, the researcher noted that many of the practices that teachers employed and found to be successful in their LBL programs were made possible due to being flexible in their pacing and approach based on what each individual student needed. LBL programs are successful and necessary as substantially separate classes because most educational settings do not give students opportunities to connect the reasons they learn with the self-regulatory strategies that help them achieve success (Borkowski et al., 2000). Considering that LBLD students do not typically learn how to self-correct or apply adequate learning strategies as a result of their disability, they need explicit instruction and time to understand their learning, not only at a deliberate pace but also in a classroom that allows them to explore these connections.

Participants needed to give students time to connect the reasons they learn with the self-regulatory strategies that will help them achieve success, whether through individualized check-ins, reflection, or small group processing. The flexibility to give students this time also allows
teachers to learn the needs of their students in these smaller settings and adjust instruction and curriculum to best fit each student. This differs from larger general education classes, where size and standardized curriculum demands requires teachers to deliver curriculum to a large group of students at a fast pace and hope that students will understand. This is not the fault of teachers or the system: there is simply not enough time and class sizes are too large to provide the individualized instruction that is necessary for LBLD learners given their significant learning needs. Smaller classes allow the flexibility to adjust lessons according to student needs and individualized needs. In line with this, most participants cited flexibility as a tool that has allowed them to modify the curriculum to reflect big-picture concepts, particularly in content-specific subjects such as science and history. That is, there is a greater emphasis on depth and understanding rather than breadth and coverage. The literature supports these findings because LBLD students struggle to access the curriculum and comprehend information independently due to developmental language disorders that make foundational literacy skills difficult to acquire (Harris-Wright & Newhoff, 2001). The combination of a complex curriculum of language and concepts and the consistent need to process language slowly means that students need flexibility in the curriculum so they can have time to learn in a way that is meaningful to them (Harris-Wright & Newhoff, 2001).

Summary

The findings of this study aligned with the research because students who present with language-based learning disabilities have a history of failure as a direct result of their disability. The literature recommends explicit instruction and language supports as necessary to access the curriculum. This is due to weaknesses with language acquisition and learning disabilities that require direct instruction that models language necessary for learning. This requires flexibility
within the curriculum to deliver instruction that is individualized and appropriate to LBLD students’ learning styles. The research also cites a relative strength in LBLD students with regard to verbal processing, which aligns with the findings that verbally unpacking information for understanding and written output was seen as a valuable tool for learning among all participants. Finally, the history of failure and explicit need for instruction supports the need to validate students where they are and concretely show students how strategies build success (and thus, a greater sense of metacognition). The practices discussed by all participants aligned with the research with regard to the needs that must be addressed of this population of students as well as appropriate methodologies that have proven beneficial to students. Thus, the greatest examples of success from the participants’ perspectives, and reasons for lack of success among some students, are directly related to the research.

**Discussion of Research Findings in Relation to the Theoretical Framework**

The research question aligned with Borkowski’s process-oriented model of metacognition (2000) because metacognitive theory is largely centered around how students select and use appropriate learning strategies. Seeking to understand how teachers felt they built metacognition was intertwined with both how they taught strategies for learning and how they measured this growth in their students (Borkowski et al., 2000). As a result, this theoretical framework was the driving factor behind the interview questions crafted for this study. Findings from the data aligned with three of the core components of this theoretical framework: explicit introduction of specific strategy knowledge, recognizing the benefits of strategies for learning (thus applying them to future tasks), and motivation for and enjoyment of learning (Borkowski et al., 2000). Conversely, there were some teaching experiences that did not access this framework, but their description of these experiences seemed to highlight that many LBLD students did not
have the characteristics of “good information processors,” which was a foundational criterion of the framework as will be discussed later in this section (Borkowski et al., 2000).

This section is arranged into four parts. It will explore how participant experiences aligned with three different tenets of Borkowski’s process-oriented model of metacognition (2000) and then how the good information processing model played a role in whether students were able to access this framework.

**Specific Strategy Knowledge**

The first tenet of the framework outlines the need to introduce a specific strategy and then repeatedly revisit this strategy so students can understand its usefulness (Borkowski et al., 2000). For example, students are introduced to strategies (such as repetition, verbal elaboration, and summarization) and taught how they are effective, what they can be used for, and how to use them with different learning tasks (Borkowski et al., 2000). All participants used strategies as tools for learning, and this instruction is embedded into the learning process and tailored to student needs so they can access and understand strategies that will support their learning. This includes teacher-driven strategies such as goal setting, modeling expectations, sequencing and organizing information as a class, and scaffolding for comprehension. Student-driven strategies such as verbal processing, graphic organizers, note templates, and applying strategies to reading for vocabulary were discussed in Chapter 4.

The second tenet of the framework is applying this specific strategy knowledge to multiple contexts (Borkowski et al., 2000). It was unclear whether this was happening uniformly in all classes for each participant, but Ryann, Sam, and Alex used strategies such as graphic organizers, two-column notes, three-column notes with visuals, a notebook system, and tools for time estimation consistently across multiple classes. They also highlighted the importance of
consistently using strategies across multiple subjects for students to see the benefits of these tools in different realms. This may not have been the case for Casey because, unlike the other three participants, her school system did not offer other language-based courses in history or science. When students see a tool in a variety of areas, their understanding and practice becomes richer and students are better equipped to employ appropriate strategies to a variety of areas, which promotes independent learning (Borkowski et al., 2000).

**Recognize Benefits of Strategies for Learning**

Once an understanding of strategies and how to use them is established, students try to figure out which strategy would work based on their goals and apply it independently (Borkowski et al., 2000). At this stage, students are aware that certain strategies will work for a task while others will not, and that even with the appropriate strategy they may have to fill in gaps. They do this by maintaining awareness of their performance (Borkowski et al., 2000). Executive function skills are called upon to access the third tenet, which is a weakness for some LBLD students because they need to analyze a task, determine the best strategy, monitor their learning, and adjust as necessary through the process. This involves executive function skills such as task initiation, goal-directed persistence, attention, and organization. Because these typically are weaknesses, it seems the deliberate pacing and frequent review of strategies and concepts that participants considered to be essential in LBL courses are used to support these executive function weaknesses. Furthermore, verbal processing, small group instruction, and one-on-one check-ins help students decide which strategies are effective as they monitor their progress. It is unclear whether this tenet is independently accessible due to a student’s ability and buy-in, as participants discussed a variety of experiences with student success. For example, some were able to independently employ taught strategies in their writing (some because they
realized their effectiveness, others because they intuitively adopted them). Participants also reported that some students were not able to independently adopt specific learning strategies. Those students continued to require the support offered to them through the LBL program, where executive function skills are supported, modeled, and practiced. Participants also noted that verbally unpacking information also filled in these gaps during strategy use. In other words, some students possessed enough executive function abilities and self-awareness to access the third tenet of the framework, while those lacking in these skills or accurate self-perceptions continued to need adult support to build upon foundational abilities before they could access this aspect of the framework. Regardless of weaknesses in the latter scenario, executive skills, student ability, and metacognition as a whole can grow, evolve, and be reshaped with proper classroom instruction and student learning experiences. Just as cognitive development and inconsistencies in learning contribute to poor skills, proper instruction can enhance and develop skills (Borkowski et al., 2000).

It is important to note that the participants’ experiences seemed to show that mastery of tenet 3 was not necessary for accessing the fourth tenet. The fourth tenet of the framework states that students can understand that certain strategies are beneficial to their learning because they have seen positive outcomes when they used them in the past (Borkowski et al., 2000). This reinforces the buy-in to use strategies, because students can attribute their success to the effort of using a strategy. Students thus gain control of their learning process and are less likely to blame outside sources such as difficulty or luck (Borkowski et al., 2000). Some students who have difficulty accessing the third tenet may have had trouble deciding which strategies were appropriate, but they were willing to use them with support.
The outcomes of the fourth tenet align with the findings because all discussed the need to concretely show students how their writing and overall learning improved with strategy use. All participants stated that students must realize for themselves why a strategy is beneficial before they will employ it independently. Participants also found that many students were able to see how strategies worked over time, and that if students could concretely see how strategies helped them improve, then they felt the control necessary to succeed as opposed to blaming the outcome on luck, difficulty of task, or their disability. Some examples of this included reflections, test corrections, and explicitly showing students how they had improved through adoption of these tools. When students come to understand that feedback is a tool for improving in the future because they learn how to self-correct, then they learn to believe they are capable of achieving their goals and master a sense of self-regulation (Borkowski et al., 2000). Because of the individual nature of teaching, it is difficult to generalize how, why, when, or if these strategies will click for students. Thus, the researcher cannot definitively say that all students may access these tenets or access them at all times. However, participants expressed efforts to attain the goals for learning outlined in this framework, specifically its first five tenets.

The fifth tenet posits motivation and enjoyment of learning due to belief in one’s success as a result of the fourth tenet (Borkowski et al., 2000). Self-regulation is reinforced through associating the appropriate strategy with learning. Most curriculums do not build this understanding in students as part of everyday instruction (Borkowski et al., 2000). It seems that the history of failure that many participants cited as a chronic issue among LBLD students had stifled their ability to enjoy learning and feel motivation to succeed. It is no wonder that participants were able to see some students access this sense of motivation and enjoyment over time: the pacing of the LBL program curriculum allows students time to connect the reasons they
learn with the self-regulatory strategies that can help them achieve success. Participants noted this as a necessity for LBLD learners, and according to this theoretical framework it is necessary for meaningful learning experiences.

Students who can enjoy learning are able to set short- and long-term goals, another component of the framework, because they are in control of their learning and know how to succeed (Borkowski et al., 2000). This aligns with the findings because, within the program, participants provided rubrics, organizers, and checklists to help students set short-term goals for a long-term project. This reinforces control for learners because they are instructed on how to use strategies to meet these smaller goals. One student who was able to internalize this strategy instruction at an independent level was able to move into the mainstream English class, telling her teacher, “I love English now.”

**Metacognitive Characteristics**

While many student success stories shared by participants aligned with many tenets of this theoretical framework, there were also glaring examples of students who were not able to access many of these tenets. Several aspects of the good information processing model, as it specifically relates to Borkowski’s framework, are essential to building metacognition: (a) possess a sense of awareness for why strategies are useful in order to apply them across multiple contexts; (b) be able to reflect and plan; (c) possess motivational characteristics such as a willingness to put forth effort, believing it is essential to learning; (d) possess some sense of internal motivation, be task-oriented, and maintain goals that are set for themselves and not others (e.g., work for a grade to make parents happy); (e) possess a sense of self that they strive for and a sense of self they fear; and (f) have access to parents, schools, and a society that consistently supports their learning (Borkowski et al., 2000). The idea behind Borkowski’s
process-oriented model of metacognition (2000) is that it enhances and builds upon these characteristics to help students become metacognitive learners (Borkowski et al., 2000).

It could be argued, however, that students who present with very few of these characteristics need greater intervention than LBLD peers who may possess stronger executive function skills; have had more consistent access to effective strategy instruction in their learning path; or possess a sense of resilience that allows them to stay motivated, put forth effort, and dare to imagine their hoped-for and feared selves. Participants noted, in different capacities, the need to motivate students or build them up so they would not be afraid of failure and feel they were capable of success. Many found this necessary for bringing students to a place where they could accept strategies or instruction that participants felt were necessary to their learning.

Cognitive and academic evaluations determine whether students should be placed in LBL programs. Consideration of these process-oriented skills, however, is not part of the entrance criteria and may offer some insight into the likelihood that students will accept strategy instruction and become more metacognitive learners.

**Summary**

Borkowski’s framework aligned with participant findings because an assigned task triggers a response to tap into executive processes that allow students to gain specific strategy knowledge, which are supported in LBL programs. This includes repetition (pacing, frequent review and preview of curriculum concepts); organization (graphic organizers, two- and three-column notes); verbal elaboration (verbal processing, one-on-one check-ins, whole group instruction); and summarization (reflection, notes) (Borkowski et al., 2000). These foundational strategy skills are embedded within curriculum and instruction in the LBL program, and three participants used them consistently in other LBL program classes. Performance according to
these strategies is also measured as part of the curriculum, providing concrete feedback to students that enhances their sense of self-knowledge through goal-setting and reflection and builds personal motivation by giving them control of their learning and reinforcing the importance of effort and attributional beliefs (Borkowski et al., 2000). Students who can tap into these tenets build a sense of intrinsic motivation, see value in trying to tackle increasingly difficult tasks, and ultimately develop a system for self-regulation that builds upon the metacognition that is necessary in the writing (and learning) process (Borkowski et al., 2000).

Executive function and metacognitive weaknesses compete with the theoretical framework, but students are malleable and capable of addressing these weaknesses through consistent and effective instruction across school, home, and the community. Based on participant responses, this seems to be a fundamental focus in LBL programs. Students who possess stronger characteristics, as outlined in the good information processing model, seem apt to advance at a faster rate with regard to strategy acquisition, self-regulatory learning, motivation, and metacognition.

**Credibility and Trustworthiness**

Given the areas of vulnerability outlined in this chapter, the researcher worked to ensure credibility and trustworthiness through member checking, following up with participants to ensure the way their information was understood by the researcher was accurate. During the interviews, the researcher asked whether the participants had anything to add or felt they had not covered something during the interview. Additionally, the researcher provided detailed descriptions of the participants. Given the small number of language-based learning programs in Massachusetts, the researcher did not identify which two participants had worked with her to protect their anonymity. The researcher also kept a journal and memos on interview transcripts in
which she reflected on the process in an open and deliberate fashion. She referred to these notes throughout the research and writing process.

**Implications for Future Study**

As the research suggests, there is a correlation between strong metacognitive awareness and effective writing and communication skills in students because they are able to independently monitor their level of understanding throughout the writing process (Roberts et al., 2014). This study contributes to the literature with regard to effective instruction and the significant needs of LBLD students. The results of this study also implicate several considerations for future study. These findings are based on both the results of this study and limitations identified by the researcher.

As a result of this study, it would be beneficial to study the effects of strategy instruction, particularly as it relates to writing, among high school students. There is already a limited body of research with regard to self-regulated learning strategies at this level (Chalk, Hagan-Burke, & Burke, 2005; Spruce & Bol, 2013). Furthermore, strategy instruction as it relates to high school LBLD students and writing specifically is extremely limited.

In line with these findings, it would also be beneficial to understand the writing practices among LBLD high school students both with and without strategy intervention. There is a limited identified population of these students and variability across Massachusetts with regard to LBL programs. As a result, most public-school districts do not offer LBL programs at the high school level. To better understand the writing practices of this vulnerable population of students would better inform educators and administrators as to the need for specific interventions for equitable access to the curriculum.
In accord with Borkowski’s process-oriented model of metacognition (2000), results of this research study also highlight the implication to study the effect of student success on motivation and enjoyment of learning in LBL programs. This also aligns with recommendations to determine measurement of teacher intervention and its effects on student independence. It is difficult to determine how educators determine the amount of support they must provide to students and its implications for student independence and learning.

In line with the good information processing model, which influenced this study’s theoretical framework, implications for future study include understanding how educators understand the parent and community impact on their students’ strategy development. According to this model, students are best able to acquire strategy awareness in multiple contexts. This extends beyond subject areas and into different facets of life: school, home, and community. It is important to better understand how these influences build metacognition in students to provide a framework for enhancing learning opportunities in this vulnerable population of students, specifically. Furthermore, it is important to understand how educators can bridge this understanding and communicate with parents and community members to teach consistent strategy usage across multiple realms for student learning.

Finally, the research supports the need for significant support of literacy skills in all academic disciplines as students advance to secondary grade levels. Therefore, it would be beneficial to study the teaching practices of secondary educators across all content areas to determine the extent to which educators embed literacy instruction into the curriculum in order for students to access content-specific material. It is important to understand how all educators are prepared to support the literacy needs of struggling learners so that students may access the
curriculum in the least restrictive environment, whether that be in an inclusion classroom or a substantially separate learning program.

**Implications and Recommendations for Practice**

This research considered the perspectives of high school educators in LBL programs and their experiences with metacognitive and self-regulatory instructional strategies. The interview questions aligned with the theoretical framework to better understand its following key concepts: strategy use; specific strategy knowledge; executive processes; self-regulation tasks; performance; feedback; self-knowledge; motivation. All participants felt that providing students with strategies that they understood and felt benefitted them prompted greater opportunities for motivation, independence, and enjoyment of learning. Several implications for practice arose as a result of this study.

The first recommendation includes the importance of implementing consistent strategies across all course content areas. This is because students must see the effectiveness of strategies in multiple contexts in order to see their value and internalize their usefulness. For schools that do not provide comprehensive LBL programs (that is, do not offer LBL courses in all subject areas), it is equally important to implement consistent strategies within the inclusive general education classrooms.

The second recommendation for practice as a result of this study is to call upon parents and community members to support strategy use to enhance what is introduced and practiced in school. For example, verbally processing information is a strategy that is both useful in the classroom and in day-to-day situations where parents could offer such support. Building this bridge beyond the classroom is essential to providing LBLD students with the utmost support for independent learning, both inside the classroom and out.
The third recommendation stemming from this study is a need to remind educators how essential it is to highlight and celebrate student successes, especially when these successes are a result of strategy use. While this is a common practice among teachers to praise students to build self-esteem and show genuine excitement for success, it is also necessary. As this study has shown through the theoretical framework, students who see their successes as a result of strategy use are inclined to feel they are capable, which results in higher levels of motivation and, ultimately, enjoyment of learning.

The fourth recommendation as a result of this study is professional development and more cohesive educator preparation programs for special educators, general education teachers, and administrators to raise greater awareness of learning needs and essential teaching practices for this vulnerable population of students. All participants in this study noted training that came as a result of trial and error in the classroom, professional development and consulting through private schools serving students with LBLD, and experiences teaching within these private schools. However, these experiences are pieced together according to individual experiences and are not accessible in a consistently or cohesive format. It is important to note that these recommendations also extend to general education teachers and administrators, who arguably require more exposure to teaching methodologies and the learning weaknesses of this population given the state’s requirement that students be educated in the least restrictive environment and the lack of training offered to secondary educators with regard to literacy. Ideally, training should extend beyond professional development and be implemented into college curriculum for all degree types (general education, administration, and special education).

The final recommendation based on this study is greater outreach for administrators and school systems to understand the needs of students and diagnostic criteria of students with
Access to services for students with LBLD, whether it be in substantially separate LBL programs or across inclusive general education classrooms, are based on administrative awareness; this means that students are only receiving supports if their administrators have background knowledge of language-based learning disabilities. This exposure comes largely from teaching experience in the private sector or recommendations from outside neuropsychological evaluations. Students with LBLD may be serviced according to the priorities and awareness of their school district, rather than meeting the needs of special education students across Massachusetts. A language-based learning disability is not a diagnostic criterion for special education services, so identification of this specific type of disability, complex in nature, is difficult to concretely identify. Therefore, greater outreach and more specific criteria to educate districts of the profile and needs of an LBLD student are necessary.

Conclusion

The goal of this study was to understand the experience of high school teachers in programs who are working to build self-regulation and metacognition through strategy instruction and use. A better understanding of these experiences could provide educators with a more cohesive understanding of effective teaching methods to support this population of students within the public school setting. It may also justify the need for substantially separate programs that cater to these needs within the inclusive public school setting, as opposed to private schools.

First, participants felt that strategy instruction was a necessary tool to build metacognition and enhance independent learning. However, students needed foundational characteristics in order to access these supports. These characteristics largely included a willingness to accept strategy support and the ability to see its effectiveness. Students who were personally able to accept strategy support in an environment where educators could show them
its effectiveness were able to achieve motivation and enjoy their learning, which aligned with the framework of this study.

Secondly, participants highlighted some barriers to learning that impacted the ability to independently utilize strategy supports as a means to enhance learning. It did not seem that students who were unwilling to accept strategy support were able to compensate independently for their disability. It also seemed that participants adjusted their instructional practices to meet and validate students at their current state of understanding. Overall, students who either relied on their teachers (participants) to access strategy support or denied these interventions seemed less independent than students who were open to this education. The literature supports many underlying variables that influence how willing a student may be to either recognize or accept certain strategies for learning.

It is difficult to determine the extent to which internal variables (such as a student’s cognitive profile) and external variables (such as the learning environment, support outside of the classroom) play on a student’s learning. In light of the research findings, metacognition and student growth are malleable (Borkowski et al., 2000; Ehren et al., 2014). Keeping this in mind, strategies are simply tools that provide a pathway towards achieving a goal to provide students with an education that allows them to be independent thinkers with a clear voice. Acknowledging that each student is a unique learner simply because they are an individual, while also considering the learning difficulties that may interfere with their understanding, is part of why it is important for educators working with this population to know their students so well within a small learning environment. Promoting such an education to a vulnerable population of students will foster growth and enjoyment of learning that is necessary for independent, critical thinkers.
References


Appendix A. Email Solicitation

Hello,

My name is Meaghan Fitzpatrick and I am a doctoral student at Northeastern University. I am conducting research on the experiences of educators who teach writing to students with Language-Based Learning Disabilities (LBLD), and I am inviting you to participate because you have experience with this population of students.

The research seeks to understand your experiences working with students who present with LBLD, and any information you provide will be strictly confidential. Participation in this research involves two face-to-face interviews and one follow-up interview that will take place via Skype or phone. The first and last interview will take no more than 45 minutes, and the second interview should be between 45 and 90 minutes. The entire process will take no more than six weeks, and may help better understand teacher experiences as they relate to strategy use and writing instruction.

Participation is entirely voluntary. There is no pressure for you to volunteer for this study.

If you would like to take part in this research, you may respond to the email with your intent to participate and I will follow up to schedule an initial interview at a time and place that is convenient to you. If you have additional questions, you may ask them at any time. I can be reached at 774-487-4137 or Fitzpatrick.M@husky.neu.edu. Emails sent to any other email address must be deleted per Northeastern University IRB.

Thank you for your time and consideration.

Sincerely,

Meaghan Fitzpatrick
### Appendix B. Interview Question and Concept Table

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<tr>
<th>Interview Questions</th>
<th>Key Concepts of Theoretical Framework</th>
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| Can you tell me about how you came to teach students with LBL Disabilities?  **[Narrative]**  
➢ What comes easiest in your work?  
➢ What is most difficult about your work?  
➢ Why do you do this work?  
➢ What, your opinion, are vital tools (teacher-taught) for learning in the classroom?                                                                                                                                                                                                 | ● Background information                                                  |
| Can you describe strategies you use in the English classroom?  **[Descriptive]**                                                                                                                                                                                                                                                                          | ● Strategy Use  
● Domain-specific knowledge                                                                                          |
| How do you feel about strategy instruction on teaching the writing process?  **[Circular]**                                                                                                                                                                                                                                                             | ● Executive processes  
● Specific strategy knowledge  
● Self-regulation tasks                                                                                             |
| Could you tell me about a typical day in the classroom where your focus is writing instruction?  **[Narrative; mini-tour]**                                                                                                                                                                                                                             | ● Strategy Use  
● Domain-specific knowledge                                                                                         |
| What are some essential stages involved in the writing process?  **[Structural]**                                                                                                                                                                                                                                                                           | ● Domain-specific knowledge                                                                                              |
| Please could you tell me about how you teach writing to students with LBL Disabilities?  **[Descriptive]**                                                                                                                                                                                                                                             | ● Domain-specific knowledge  
● Performance  
● Feedback                                                                                                             |
| Compared to students who do not present with LBL disability, how would you describe their needs for learning as different?  **[Comparative]**                                                                                                                                                                                                                           | ● Domain-specific knowledge  
● Performance                                                                                                           |
| How do you feel about the way you teach writing?  **[Evaluative]**                                                                                                                                                                                                                                                                                            | -                                                                         |
| What do you think your students think about how you teach them writing?  **[Circular]**                                                                                                                                                                                                                                                                      | ● Self-Knowledge  
● Motivation  
● Performance                                                                                                       |
| How do you feel about the role of transitions/transitionaling in the writing process?  **[Evaluative]**                                                                                                                                                                                                                                                        | ● Executive processes                                                                                                     |
| How would you describe metacognition as a tool for learning?  **[Descriptive]**                                                                                                                                                                                                                                                                               | ● Self-knowledge                                                                                                          |
| Could you take the most recent writing assignment you taught and describe how you went about instructing students to be aware of their own writing process?  **[Narrative; mini-tour]**                                                                                                                                                                                  | ● Specific strategy knowledge  
● Self-knowledge                                                                                                           |
| Tell me about a time when a student surprised you in the writing instruction process.  **[Behavioral interviewing technique]**  
➢ Why were you surprised?  
➢ What specific skill did the student demonstrate success/failure with?                                                                                                                                                                                                                              | ● Strategy Use  
Performance  
● Feedback                                                                                                              |
What are the main differences between instruction in the LBL Program and the general education classroom? [Contrast]

➢ How are teaching methodologies impacted?
➢ How may the curriculum be impacted?

| Strategy Use |
| Domain-specific knowledge |

If you could bestow any ability into your students automatically (that would increase their independence as good writers), what would it be? [Hypothetical]

| Self-Knowledge |
| Motivation |
| Performance |

If you could experiment with anything in the classroom (risk-free, no budget limitation, etc.), how would you exercise this opportunity? [Comparative]

➢ Are there any writing or strategy techniques you would explore?

| Self-Knowledge |
| Motivation |
| Performance |

What are your feelings about this interview and all we have covered?

➢ Is there anything you would like to add?

| Closure |